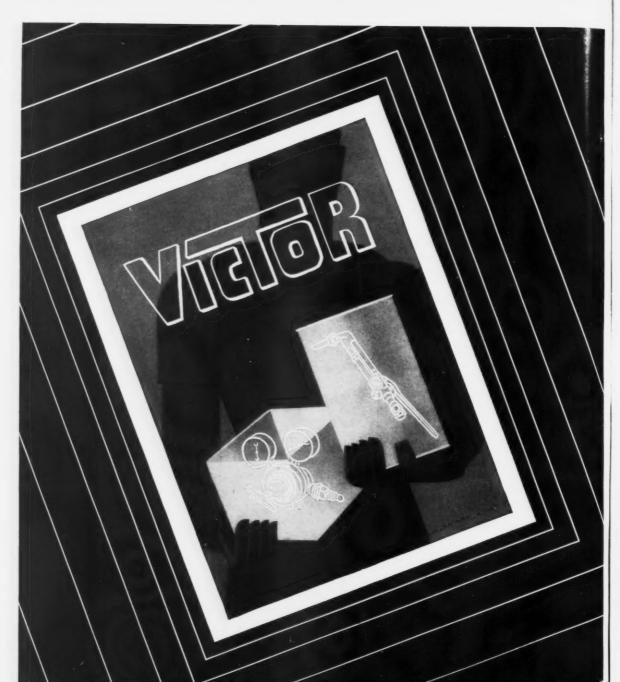


• Magnesium pouring in San Jose, Calif. Pure magnesium is poured in the shape of these cylindrical ingots. (Details, page 5)

In this issue: Turning Green Help Into Producers; How to Increase Sales Profits; New Uses for New Materials; Trailer-Pallet Plan Doubles Output; Western Metals Congress Program; How to Share in \$50,000,000 of Ford Parts Offered California Manufacturers



### modern gas welding and flame cutting equipment

visit our booths (numbers a-18 and a-22) at the western metal exposition, oakland, march 22-27, 1947

### VICIOR EQUIPMENT COMPANY san francisco · Los angeles

victor distributors and repair stations in all major cities from coast to coast



THE DOCTOR SAYS IT'S

### "Industrial Arteriosclerosis"

What the Doctor means, of course, is "thickening of the walls of the arteries"—the rust-clogging of those all-important industrial pipelines that convey water, compressed air, gases, fuel oil, refrigerants, lubricants, and an almost endless variety of process materials in fluid form.

Symptoms may be evident in reduced volume of flow, inadequate pressure, increased pumping costs, or rust-stained solutions.

Surface coatings of any kind offer but temporary protection and, eventually, rust-roughened pipe interiors will accelerate "sliming-up," particularly in lines with threaded fittings. The result may be a product contaminated by flaked-off scale, non-seating valves, clogged indicating or recording instruments, untimely dismantling for cleaning, or premature pipe replacement.

Copper tubes are not a panacea for all industrial piping ills—but they go a long, long way toward a permanent cure. Just how and why are explained on the following page.

### THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut

Anaconda COPPER TUBES
AND FITTINGS





# COMPARE THEM—point for point with any material...at any price

Copper tubes combine the advantages of corrosion resistance, light weight, flexibility and low installation costs.

Pipelines of copper tubes connected with solder fittings can be taken down, moved, or have new connections cut in faster and with less expense than with threaded pipe.

Bends and offsets to clear beams, girders or other obstructions can be made readily in copper tubes.

Assembled with solder fittings, such lines have a low coefficient of friction and reduced resistance to flow ... no need for oversize lines to provide for clogging.

Anaconda Solder Type Fittings can be installed in restricted space where the use of a wrench would be impossible.

Anaconda Copper Tubes in standard sizes are furnished to A.S.T.M. and Federal Specifications: Soft in 60-ft. coils; also hard and soft in 20-ft. straight lengths from  $\frac{3}{8}$ " to 12" in diameter. Larger sizes, up to 26" I.D., can be made to order.

Publication C-24 tells a lot more about Anaconda Copper Tubes and Fittings. A copy will be mailed on request.

#### THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



Anaconda COPPER TUBES and FITTINGS

### This Month in

### WESTERN **INDUSTRY**

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#### Front Cover

Birth of a pig at Permanente's magnesium plant foundry at San Jose, Calif., is shown on our cover. Permanente is modernizing its San Jose plant to reduce costs of producing magnesium. Pure magnesium is poured in the shape of cylindrical ingots, while alloys are cast in molds similar to those used for aluminum at Mead. The Carbothermic process produces magnesium 99.99 per cent pure.

#### Editor

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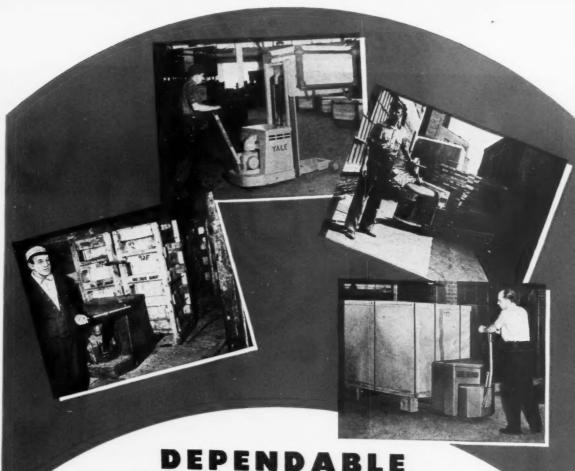
ncreased production, faster materials handling and greatly reduced handling costs are some of the important economies brought to industry by the Electric Battery Hand Truck. It can be handled by one man with amazing ease . . . guided through narrow aisles, around sharp turns and up and down grades, always under absolute control. And when batteries are Exide-Ironclads, you are assured of dependable, safe, low-cost performance. Exide-Ironclad Batteries have the bigh power ability

required for frequent "stop and go" service ...

the bigh maintained voltage that repeated lifting and hauling demands...and the bigh capacity that assures steady, day-long performance with full shift availability. You can always count on Exides for dependability, long-life and ease of maintenance.

Write us for a FREE copy of Exide-Ironclad Topics which contains "Case Studies" of materials handling problems. It tells how to cut handling costs up to 50%... covers latest developments in handling materials from receiving to shipping.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto LOS ANGELES SEATTLE SAN FRANCISCO DENVER



PENDABLE



### A new era in lubrication...



For the first time since its wartime development, T5X—the sensational new purple oil for gasoline, Diesel, natural gas and butane-powered engines—is available in quantity. T5X is a fully compounded, detergent-type oil. Its unusual purple color comes from an exclusive ingredient which helps give the oil its remarkable stability.

T5X "As distinctive in quality as it is in color"



# THE SENSATIONAL PURPLE OIL!

**GASOLINE ENGINE TESTS**—In the "L-4" Coordinating Research Council designation tests for gasoline engine lubricants, T5X lasted *double* the length of time required for top lubricating performance!

### AND T5X HAS BEEN THOROUGHLY PROVED BY INDUSTRY!

Just as T5X has passed the stiffest tests of science, so has it met the exacting requirements of industry. Literally thousands of farmers, engineers, shop foremen, maintenance men, etc., who have used T5X have expressed their amazement at the unusual stability and performance of this great oil!

#### RECOMMENDED USES

T5X is so high in quality, so versatile in its uses, that it will give outstanding protection and performance in any kind of gasoline, Diesel, natural gas or butane-powered engine in *all* industrial operations.

#### IMMEDIATE DELIVERY

T5X is now available for immediate delivery. For further information about this sensational new *purple* oil, telephone the Union Oil representative in your vicinity, or wire Sales Dept., Union Oil Company, 617 West 7th Street, Los Angeles 14, California.

### JUST HOW GOOD IS T5X? TAKE A LOOK AT THESE TEST RESULTS!

**DIESEL TESTS** — T5X easily passed the grueling 500-hour continuous-run test in a high-speed automotive-type Diesel engine operating at 2000 r.p.m. and maximum load...considered the most exacting test of all for Diesel lubricants!

### UNION OIL COMPANY OF CALIFORNIA

March, 1947-WESTERN INDUSTRY

oil

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rom

. 1947



Copper dome being fitted with sliding manhole cover

# COPPER FOR PROCESS EQUIPMENT by REVERE

• These photographs show very clearly how easy it is to fabricate large or complicated equipment out of Revere copper. They were taken in the plant of Schock, Gusmer & Co. Inc., Hoboken, N. J., leading maker and installer of brewery equipment and a believer in the superiority of copper since the company was founded in 1875.

Copper has many and great advantages for the process industries. It not only is easily fabricated, but it has high heat conductivity, which means fuel economy—high electrical conductivity—it resists attack by many solvents and chemicals—it has a long, almost endless life—its reclaim value is high—it is easily polished to glistening brilliance, dressing up your plant for visitors.

Revere will be glad to work with you or your fabricators in determining the best type of copper for your needs.



COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York
Mills: Baltimore, Md.; Chicago, Ill.: Detroit, Mich.;
New Bedford, Mass.; Rome, N. Y.—Sales Offices in
Principal Cities, Distributors Everywhere.
Pacific Coast District Sales Offices in
San Francisco, Seattle, Los Angeles

#### REVERE COPPER

Available types: Electrolytic • Arsenical • Phosphorized
Silver-Bearing • Oxygen-Free High-Conductivity

Available forms: Plate • Sheet • Strip • Bar • Rod • Forgings

Extruded Shapes • Pipe • Tube • Capillary Tube

Photos courtesy of Schock, Gusmer & Co. Inc., Hoboken, N. J. fabricators and installers of brewery, distillery and similar process equipment.



Rough-forming copper dome of a 16' kettle



Hand-finishing copper vent stack elbows

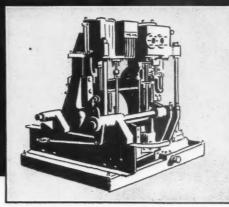


Bottoms for brew kettles, made of 1/2" copper



Copper tubes are easily shaped by hand

# 13 types-all 100% pure Pennsylvania



### **Cycol Steam Cylinder Oils**

Every conceivable problem of steam cylinder lubrication is met by one or another of the thirteen specialized Cycol Steam Cylinder Oils. The line includes both compounded and uncompounded oils. All are made 100% from *Pennsylvania* cylinder stock.

Your nearest Associated Lubrication Engineer will come to your plant at any time to advise you on the proper Cycol Steam Cylinder Oil—or any other Associated lubricant—to meet any specialized need. Telephone him today.

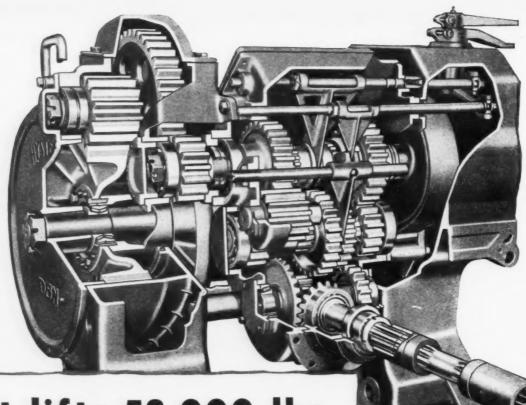


Call your Associated Representative for expert help on any lubrication problem.

Tell Your Associated Dealer You Want a Credit Card



TIDE WATER ASSOCIATED OIL COMPANY



it lifts 53,000 lbs. ...it's made of Bethlehem Alloy Steels

This timber-towing winch can snake, hoist and carry better than 26 tons.

Where could you find a tougher job for gears and shafts, or a better example of fine alloy steels at work? The Hyster Company of Portland who manufacture this winch have long used Bethlehem Alloy Steels. In these steels they have found the highly uniform response to heat-treatment and machining

needed for mass-production operations.

When you buy alloy steels from Bethlehem Pacific you get more than steels. You get metallurgical consultation and advice. If, for instance, you want to know what alloy steel will best meet your specific application, or what heat-treatment will best develop the desired properties, Bethlehem Pacific metallurgists will gladly study your problem and advise you. Write or phone.

BETHLEHEM PACIFIC COAST STEEL CORPORATION

General Offices: San Francisco

District Offices: Los Angeles, Portland, Seattle, Salt Lake City, Honolulu

Steel Plants: Los Angeles, South San Francisco, Seattle

Cutaway view of Hyster Towing Winch used in the logging industry. Connected to a tractor power-take-off, this winch transmits power through the gear train to a revolving drum. Alloy steels from Bethlehem Pacific are used for gears and shafts.



BETHLEHEM PACIFIC

### He makes production vanish!

HERE IS INDUSTRY'S most costly disappearing act! Are you sure there's none of this black magic in your plant?\*

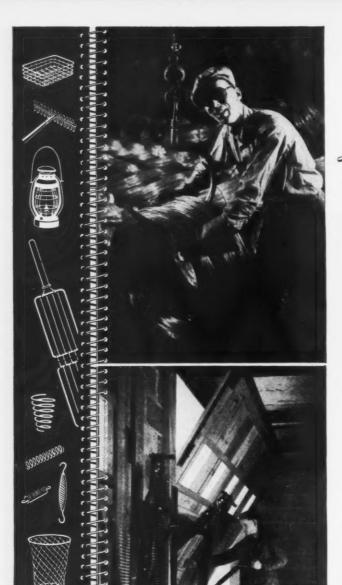
Inadequate Wiring, the industrial jinx, is at it every day. For overtaxed, overextended, obsolete wiring is cutting the efficiency of men and machines by 25 to 50 percent in hundreds of plants. Your plant power engineer, your consulting engineer, electrical contractor or utility power salesman can find this jinx . . . and throw him out!





1947

ANACONDA WIRE AND CABLE COMPANY



### If you make it of

Min

# make it of U·S·S American

COLUMBIA Steel Company, Pacific Coast subsidiary of United States Steel, has the greatest wire making facilities in the West. That's why it will pay you to come straight to Columbia for all steel wire requirements.

You will find a shape, type and grade that exactly meets your needs in the more than 400 different types of quality steel wire available to you. For example, we make wire for garage door springs, for tire beading, for gravel screens . . . and some 160,000 other products, ranging from highly intricate machines to the most commonplace gadgets.

U·S·S American Manufacturers Wire can be obtained through Columbia's strategically located warehouses or direct from our modern mills. Write, wire or call our office nearest you.

LISTEN TO . . . The Theatre Guild on the Air, presented every Sunday evening by United States Steel. American Broadcasting Company, coast-to-coast network. Consult your newspaper for time and station.



### Columbia Steel Company

San Francisco · Los Angeles · Portland · Seattle · Salt Lake Cit

### American Steel & Wire Company

Cleveland · Chicago · New York
Tennessee Coal, Iron & Railroad Company, Birmingham, Southern Distributors
United States Steel Export Company, New York

UNITED STATES STEEL

### HOW TO KEEP TRUCKS ROLLING



When materials must move fast, G-E automatic batterycharging equipment keeps trucks ready for the job

In the National Ice and Cold Storage Plant, Oakland, Calif., perishable goods must be moved quickly and continuously by means of electric battery trucks. To insure uninterrupted service 24 hours a day, the plant uses G-E all-automatic battery-charging equipment, consisting of a 5-kw m-g set and control panel. This equipment will charge an 18-cell battery any number of preset hours and shut down automatically, making it possible to charge part of the truck fleet quickly and easily while other trucks are on duty.



AUTOMATIC BATTERY-CHARGING EQUIPMENT

#### DEPENDABLE CHARGING SERVICE INSURED

When smooth plant functioning depends on quick movement of materials, you'll find the dependable, complete charging service provided by G-E charging equipment a real boon. These *designed-in* features insure the dependable charging service necessary to satisfactory truck operation:

- Automatic charging and shut-downrelieves truck operator of responsibility.
- Protection from overload and from damage which might be caused by current reversal from battery to charging equipment.
- 3. Compact construction—locate it where you can use it most conveniently.

#### G.E. HAS A COMPLETE LINE AVAILABLE

To get the most out of your battery trucks, ask your truck dealer or distributor about G.E.'s complete line of battery-charging equipment for both single or multiple charging. Or call your nearest G-E office for help in selecting the most suitable unit for your plant. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC





\* One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad. Herbert B. Maw, Governor of Utah, tells his state's story.

"Nature was kind to Utah. Deposited within her borders are rich and varied sources of coal and iron, lead and zinc, copper, silver and gold. These and many other industrial attributes are part and parcel of the undeveloped sections of this state.

"A gigantic steel industry which can serve the west signals our industrial ambition. It will form the nucleus of a network of associated industries.

"Our need now is people and leadership to share in the prosperity of a western empire. Our natural resources are practically untouched. They assure a long life to an industrial future which is just now beginning. Utah invites new and expanding industry to investigate opportunities here before deciding upon new locations."

\* \* \*

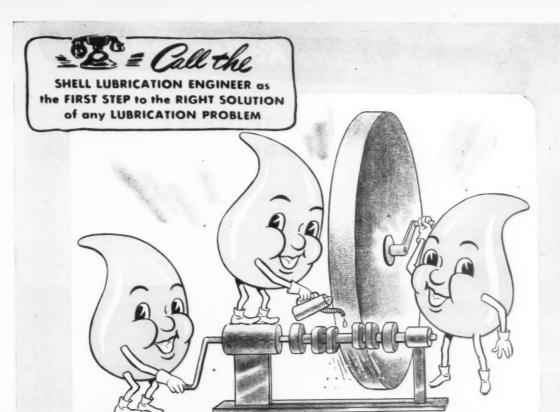
For industrial resources and opportunities, look to Utah. For unexcelled rail transportation . . .



\* Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.



THE STRATEGIC MIDDLE ROUTE



## SHELL GRINDING OIL PREVENTS RUSTING OF PRECISION-GROUND PARTS

**PROBLEM:** Manufacturer of tiny precision parts found he could get required finish only by using a combination of special wheels together with a special grinding oil which was lacking in protective properties. The special wheels were a nuisance, but the real problem was the quick rusting of parts finished with this grinding oil.

**SOLUTION:** When the Shell Lubrication Engineer surveyed the problem, he suggested this test, which was made:

 A grinder, equipped with standard wheels, was used with Shell Virgo Oil as the grinding fluid to produce a panful of the parts in question. These parts were then set aside...the coating of Shell Virgo Oil their only protection against rust.

At the end of two months, no sign of rusting could be found. The manufacturer pronounced the finish obtained with standard wheels satisfactory...and ordered Shell Virgo Oil for all grinders.

CONCLUSION: It pays to consult the Shell Lubrication Engineer, regardless of the nature or size of your lubricating problem. For informative literature on Metal-Working oils, write Shell Oil Company, Incorporated, 50 West 50th Street, New York 20, N. Y.; or 100 Bush Street, San Francisco 6, California.

### **SHELL METAL-WORKING OILS**

For every metal...for every operation



# do you know Roller Chain...



② I'M NOT JUST TALKING on that long-life angle. In our product development laboratories, we actually prove the wear-resistant qualities of Baldwin-Rex. This machine, for example, runs the chain over small sprockets at excessively high speeds under conditions considerably more severe than actually encountered to determine life expectancy. In this manner, we get data on materials, heat-treatment, parts design, etc., that mean added service for you.





You can simplify replacement and chain selection, cut costs, and improve deliveries by buying standard roller chains. Your Baldwin-Rex man will be glad to give you the facts on standard chains and help you with your application problems.

### ELIMINATES MORE THAN SLIPPAGE!

1 POSITIVE BALDWIN-REX ROLLER CHAIN DRIVES not only stop power-wasting slippage, they also eliminate damage to your machines by their inherent elasticity that absorbs shocks and overloads. And, their exceptionally long service life eliminates frequent "time-outs" for repairs and adjustments.



3 THIS PLANT found the exceptionally long life built into every link of Baldwin-Rex Roller Chain a big help in keeping the wheels turning without interruption. Despite repeated shock loading, the drive required very little servicing and no down-time for repairs. You'll find Baldwin-Rex can do the same for you!

### BALDWIN-REX

ROLLER CHAINS

BALDWIN-DUCKWORTH DIVISION OF CHAIN BELT COMPANY

352 Plainfield Street, Springfield 2, Mass.





With building conditions the way they are, I was tearing my hair out trying to find a way to get the extra space we needed so badly."



"Then my purchasing agent really came through. He showed me how the Quonset 40 would give us exactly what we needed—in a hurry and at low cost."



"So here's our new Quonset 40. Fireresistant, durable and economical, it's got everything we want. And that's why the p. a. got a raise!"

### THE STRAN-STEEL QUONSET\* 40

Fabricated structural Stran-Steel construction with clear-span interior. Width is 40 feet, with length as desired, in extensions of 20 feet. Sliding door, four windows and ventilator in each end are standard.



P-S-S-T, FELLAS!

Why not try recommending Quonsets to your boss? There are three basic Quonsets, you know—the "40," the "20" and the "24." One of them's sure to fill the bill, whether you need an administrative office, a garage, a warehouse, or anything in between. To get all the facts, just see your local Quonset dealer.



### **GREAT LAKES STEEL CORPORATION**

STRAN-STEEL DIVISION + DEPT. 44 + PENOBSCOT BLDG. + DETROIT 26, MICH.
UNIT OF NATIONAL STEEL CORPORATION





#### THE QUONSET 20

The width is 20 feet, with about any length you say. Like all Stran-Steel Quonsets, it is rot-proof and laughs at termites.



#### THE QUONSET 24

Supplied with open front, solid front panels or sliding doors. Width, 24 feet, with length to suit, in 12-foot extensions.



# Two Top Industrial Paint Names

W. P. Fuller & Co.—founded in 1849
R. N. Nason & Co.—founded in 1860
Combined: 185 years of paint-making experience in the West







FACTORIES: Fuller's paint production facilities now exceed those of any combination of other like Western manufacturers. Fuller factories strategically placed in San Francisco (2 plants), Los Angeles and Portland.

LABORATORIES: Fuller now maintains the West's largest staff of paint chemists and technicians; provides them the finest research and control equipment. Laboratories located at San Francisco and Los Angeles.

**DISTRIBUTION:** Fuller Branches and Warehouses are located in 'orty-three Western cities—"near everywhere." Fuller gives better sales service to all customers; faster delivery on all products.

## EXPERIENCE,

facilities and personnel of W. P. Fuller & Co. and R. N. Nason & Co. combine to give the West outstanding Industrial Finishes

Let Western Industry grow! We are set to serve it!

We've pooled the industrial "know-how" of two pioneer paint makers to form by far the largest paint-making organization in the West.

Advantages to you? Three-definitely!

1. More chemists with more experience bring their knowledge to bear upon each individual finishing problem. 2. The West's largest paint-making facilities assure you the products you need in the quality and quantity you want. 3. Customers get coordinated aid through a sales staff that is laboratory-backed and service-conscious.

Wherever you are in the West, these three big benefits are "at your elbow." Fuller covers the West as no one else can!

### TEAM UP-

### W. P. FULLER & CO.

Factories at San Francisco, Los Angeles, Portland Branches and Warehouses throughout the West

Leadership through Research ......

### **Industrial Finishes Division**



Now—highest quality lacquers, varnishes, stains, fillers, enamels—for wood, wood veneers or plywoods—for metals to be cured by gas, electric oven or infra-red tunnels—for plastics and other production materials.



Now-finishes that give better covering, better "mileage," higher gloss, greater wear

Now—finishes that observe your production costs yet carry their "coating you love to caress" clear to the sales floor.

Yes, FULLER - West's largest!

### Plant Maintenance Division



There's a Fuller exterior or interior paint for maximum wear, maximum attractiveness on all wood, brick, metal, concrete and stucco building surfaces.



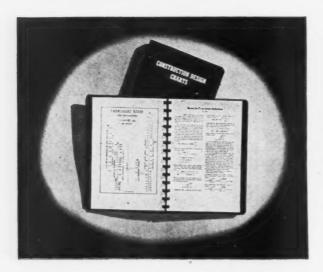


And get Fuller's free planbook on "Color Engineering." Shows how scientifically used color lowers accident rate, lessens employee fatigue, lifts working morale.

ENGINEERS - CARPENTERS - CONCRETE MEN - FOREMEN - SUPERINTENDENTS:

# SOLVE ENGINEERING PROBLEMS at a Glance!

There is no time to waste these days on tedious figuring of routine problems! This popular edition of CONSTRUCTION DESIGN CHARTS, by Consulting Engineer James R. Griffith, gives countless engineering shortcuts—gives the answers to engineering and preliminary design problems in a flash! Engineers—carpenters—concrete men—foremen—superintendents—there's a whale of a value in this book for every man engaged in construction today!



This is the third reprinting of the CONSTRUCTION DESIGN CHARTS, and the contents are exactly the same as those which appeared in the original enlarged edition of 1943. This book contains 72 charts and has 150 pages filled with valuable information that will help you. Covered in sturdy black fabrikoid, stamped in gold, the book has a special metal binding that allows each page to lie flat for easy reference.

### THIS NEW EDITION IS LIMITED - ORDER TODAY

The original edition of CONSTRUCTION DESIGN CHARTS disappeared like magic, so there's no time to lose in getting your order in for this book. The latest reprinting of this popular book is now available and our supply is definitely limited. We suggest placing an order immediately.

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> Add 8c Sales Tax If ordering from a California address.

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Concrete Form Design
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Measurement of Triangular Areas

...PLUS MUCH MORE!

#### MAIL THIS COUPON TODAY!

KING PUBLICATIONS 503 Market Street San Francisco, California

YES, I want a popy of CONSTRUCTION DESIGN CHARTS, for which I enclose \$3.00 Add 8c sales tax if ordering from a California address. If I'm not completely satisfied, I can return book in 10 days and get my money back, plus postage.

Address
P. O. State
Position Company

# Mow Danly Special Die Sets



### with any additional machining required

New equipment installed in the Danly shop permits us to do any machine work on large or complex die sets incidental to the mounting of the dies. Inserts, recesses, additional boring, keyways and other machining can be done to the customer's specifications.

Time is saved by this service as work on dies and on the die set can be done at the same time. It permits the die shop or tool room to devote their equipment and man hours to the making of dies. The problem of the handling of big sets, for which the die shop or tool room are not generally equipped to do economically, is also solved by this service.

These special die sets are then delivered ready for the mounting of the dies. Note the size and complexity of the die set shown on this page. This

1947

die set—machined at Danly—is an example of the additional machining and service which this company offers.

On your next special die set inquiry include the additional machining work that you wish done at Danly while the die set is being made. The cost of this machining will be shown as a separate item in the quotation.

#### DANLY MACHINE SPECIALTIES, INC.

2100 South 52nd Avenue

Chicago 50, Illinois

Milwaukee 2 111 East Wisconsin
Detroit 16 1549 Temple Avenue
Cleveland 14 1550 East 33rd Street
Dayton 2 990 East Monument
Rochester 4 16 Commercial Street

Philadelphia 44 . 18 W. Chelten Ave. Long Island City 1 47-28 37th Street

Ducommun Metals & Supply Company 4890 South Alameda, Los Angeles 54

DANLY Special DIE SETS

MACHINED TO YOUR SPECIFICATIONS



When you THINK of Metals...think SOUTHWESTERN

### SOUTHWESTERN METALS CORPORATION

1000 East Eighth Street • Los Angeles 21, California
• PHONE • WRITE • WIRE •



# YOU GET PERFORMANCE PLUS WITH THIS MANUAL STARTER!

For push-button control of equipment such as punch presses, fans and blowers, grinders and buffers, these starters give you a lot more than consistent performance. For example—

- **t** Easy Installation and Maintenance. Entire switch panel removable for easy wiring. Conveniently located terminals and knockouts.
- Compact Design. Starter occupies little space and is easily mounted on or near machine for convenient operation. General Purpose enclosure is heavy gauge sheet steel, finished in attractive machine-tool gray enamel.
- Overload Protection. Thermal units, which fit both manual and magnetic starters, protect against harmful overloads but do not trip on normal starting or momentary overloads. "Trip-free" operation prevents holding motor circuit closed against overload.
- Safety. Slip-on cover has safety interlock which prevents removal when starter contacts are closed.

CLASS 2510 MANUAL STARTERS

are available in both General Purpose

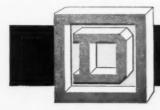
and Special Protective enclosures



Water-tight and Dust-tight Enclosure



Enclosure for use in hazardous locations



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Ability to blast clean a wide range of large and small pieces quickly and at low cost has won many friends for the Wheelabrator Swing Table. It is especially popular in shops where the daily production does not warrant the purchase of several different types of cleaning equipment. The Swing Table is ideal for cleaning large pieces normally requiring laborious hand blasting in an airblast room. Nearly 50 Swing Tables have been sold in the few months they've been on the market!

The Airless Wheelabrator blast unit used in this new and exclusive development of American En-

gineers throws 400 lbs. of abrasive per minute. The net result is perfect cleaning at high speed and at greatly reduced cost.

Opening the door of the machine brings the work table into position for loading or unloading. Closing the door places the table beneath the Wheelabrator where it rotates within the blast stream. This insures that all surfaces and cored areas are scoured to a bright clean finish. Work tables can be furnished in the following diameters: 24", 48", 66", 72" or 86".

See
BOOTH 424
Western Metal Show

Oakland Public Auditorium

March 22-27, 1947

\*Catalog 214 contains full information on Swing Table models . . . their operation, specifications and uses. Let this descriptive booklet be your guide to greater profits. Write for your free copy today.



WHEELABRATOR & EQUIPMENT CORP.
(Formerly American Foundry Equipment Co.)
381 S. Byrkit St. MISHAWAKA, IND.

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WORLD'S LARGEST BUILDERS OF AIRLESS BLAST EQUIPMENT



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That's a fair question . . . answered in part by what Signode has done for other shippers. Through long experience, Signode has developed a system of PLANNED PROTECTION that is solving packaging problems. Application of principles using steel strapping to reinforce containers often results in lighter packing weight, elimination of pilferage and reduction in damage claims. This

adds up to lower delivery cost.

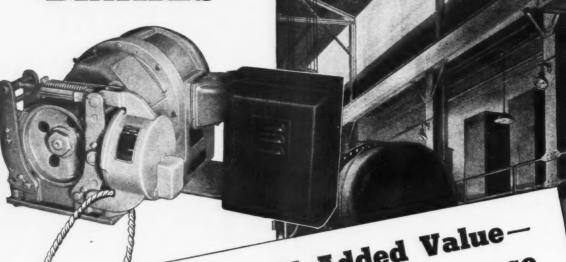
Profit by Signode's world-wide experience. Call the office nearest you or write direct to SIGNODE STEEL STRAPPING COMPANY, 2615 N. Western Ave., Chicago 47, Ill.; 458 Bryant St., San Francisco 7, Calif.; 441 Seaton St., Los Angeles 13, Calif.; 1021 4th Ave., Seattle 4, Wash.; 907 N. W. Irving St., Portland 9, Ore. Branches in 21 Principal Cities.

THE STEEL STRAPPING METHO



ALL TYPES OF SHIPMENTS





... Another P&H Added Value— Reduces Solenoid Maintenance

 They bring to AC installations the advantages of DC magnetic brakes; quick action; accurate "inch-DC magnetic brakes: quick action; accurate "inching" of loads; greater durability; trouble-free per-

 Eliminate the destructive hammer blows that Liminate the destructive nammer blows for cause mushrooming of laminated AC magnets. formance.

Avoid the vibration and frequent coil burnouts

of AC magnets, due to excessive air gaps. P&H's CD Brake and Rectifier Assembly converts

AC to DC for better braking action.

P&H Rectifier brakes eliminate both the laminated structure of the AC magnet, and the long stroke which destroys it. An important item of maintewhich destroys it. An important item of mainte-nance is thereby pared down to new minimums.

These brakes, like all the other electrical equipment used on P&H Overhead Cranes, are P&H. made specifically for crane service. Fitted to the job electrical equipment and many mechanical features are Added Values that only P&H—America's largest crane builder — can offer you.

ELECTRIC OVERHEAD CRANES

> 4604 W. National Ave. Milwaukee 14, Wisconsin

THIC GRAMES - EXCAVATORS - AND WELDERS ( PEH ) HOISTS - WELDING ELECTRODES - NUTURE

RECTIFIER UNIT. The dry type, full wave selenium rectifier unit used in P&H Rectifier Brakes converts AC current to DC without the use of moving parts. It is also liberally rated — thus requires no maintenance whatsoever. Can be mounted adjacent to brake or in a remote location. Available for 110 to 550 volt and 25 to 60 cycle operations. Write for Bulletin C-25.



 THERE'S SALES APPEAL IN STAINLESS STEEL. It's one sure way to make your product better, influence more sales . . . CMP light gauge stainless gives you more than product sales appeal . . . You gain fabrication economies, too, with less down-time and longer die life, because you receive coil-after-coil dimensional accuracy, physical properties and chemistry tailored for your special requirements, and a quality finish that's a beauty . . . CMP Stainless Thinsteel is produced in gauges thin as .001", in popular chrome and chrome-nickel grades, and in all tempers from dead soft to full hard . . . Check now for deliveries and complete information.



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GAUGES THIN AS .001"
 ...strength with lightness

 WIDE RANGE OF PHYSICALS AND ANALYSES

... tailored for your products

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STAINLESS

. EXTRA LONG COILS

• EXTREMELY CLOSE TOLERANCES



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Photo of an actual shipment using Acme Unit-Load Principle.

### by ACME Unit-Load Method

Damaged goods and profit-draining freight claims are a rarity when carload shipments travel the Acme Unit-Load way.

For Acme Unit-Load secures, protects, and braces cargoes in the grip of strong steel bands . . . assuring safe delivery at every point along the shipping line.

And, customers merely snip the bands to unload a damage-free car with a minimum of time and effort.

So, use Acme Unit-Load Band and methods for bracing, stowing your carload shipments. Then watch freight claims vanish, customer good will increase. Investigate now.

LOS ANGELES 11

SAN FRANCISCO 7

SEATTLE 4

PORTLAND 9

**HOW A CONTAINER** 

MANUFACTURER CUT FREIGHT CLAIMS

This actual case history

offers proof. In shipping

over 6,000 carloads of 55-

gallon steel drums and pails by the Acme Unit - Load

Method, damage claims dropped to a mere 3.7% a

year. In addition, 80 board

feet less lumber was used in

each car representing a cash

saving of \$6.00 per car!

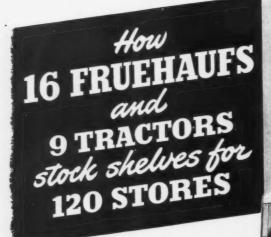
### ACME STEEL COMPANY

ACME STEEL CO. CHICAGO

### Greater Strength and Uniformity in Cap Screws-**CLEVELAND Cap Screws-**SION PROCESS KAUFMAN Cleveland dependability in threaded fasteners brings you two-fold economyassurance against breakage, and fast easy handling in assembly. Cleveland Cap Screws are made by the Kaufman Process-the modern cold-forging method that assures you stronger fasteners than any other known process. And you can depend on their accurate-to-size Madalla Constitution of the Constitution of th heads, shanks and strong smooth-running threads. Cleveland High Carbon Heat Treated Cap Screws are the toughest fasteners in this class. Write the factory or ask your jobber. THE PROPERTY OF CLEVELAND Top Quality FASTENERS The Cleveland Cap Serve Company LOS ANGELES 23 ut 16th Street, Prespect t

SAN FRANCISCO 6

DENYER A. \$14, 128 Sweet, Ma



• Rexall Drug Company matches their streamline merchandising methods with an equally modern delivery operation that

demonstrates the advantages of the Trailer 'Shuttle-Method.'

A Big Saving in Equipment! This company keeps goods flowing from warehouse to its 120 drug stores in Los Angeles and throughout Southern California with 16 Fruehaufs and only 9 tractors to pull them.

And Here's How It's Done! Only the Trailers—the load-carrying detachable bodies—are left standing for loading at the warehouse. The tractors and drivers stay on the road pulling first one and then another Trailer. An "empty" can be dropped and the tractor coupled to another loaded unit and off on its deliveries with no waiting for loading. Thus, one tractor handles two Fruehaufs in this "Shuttle" operation.

Many Hours Saved With "Automatics"! Still greater efficiency is achieved by Fruehauf Automatic Supports on each Trailer. When coupling and uncoupling, it takes but a jiffy with "Automatics" on the job. No time is lost cranking Supports up and down. No extra space is needed at crowded loading docks for elbow-room. Supports raise and lower automatically as the tractor is coupled or uncoupled. Nosediving is eliminated.

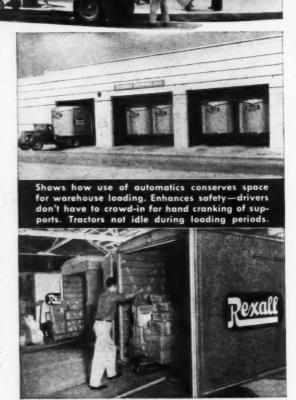
The drivers will tell you their Fruehaufs carry big loads, get around fast, and roll up as much as 50,000 miles each on these routes every year. Rexall's experiences speak well for Trailer deliveries. If you would like more facts, just call in the nearest Fruehauf man.

World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER COMPANY

9 Factories — 65 Factory Service Branches

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"Engineered Transportation"

### In Our Mail Box

#### Ion Exchange Popular

Editor, Western Industry:

We thought the ion exchange article in your January issue to be very comprehensive, and to present a very interesting picture of the use of exchangers in the sugar and related industries. We were, of course, quite familiar with the early development work in this field since we worked very closely with Amalgamated Sugar and The Dorr Company in the early pilot plant work completed at Burley, Idaho.

work completed at Burley, Idaho.

If you could spare us five to ten reprints of this article, we would appreciate it sincerely. We wish to pass these copies out to our technical men so that they may have the benefit of the large amount of scouting work you have had to do to get this information together.

FREDERICK J. MYERS The Resinous Products & Chemical Co. Philadelphia 5, Pa.

Editor, Western Industry:

We found your article on ion exchange in your January issue interesting, up-to-date, and well presented. We regret we were unable to offer you any information on our work in time for publication, and it may interest you to know that two Ion-Exchange Progress Reports, one of these Holly's, were made at the Regional Meeting of The American Society of Beet Sugar Technologists at Salt Lake City on February 3rd and 4th.

J. E. BANNING, Supt. Holly Sugar Corporation Alvarado, Calif.

Editor, Western Industry:

We read with extreme interest your article, "Western Sugar Plants Pioneer in New Ion-Exchange Process" which appeared in the January, 1947, issue of Western Industry.

The photograph appearing on page 33 showed a portion of the plant. The two instruments included in the photograph appear to be of

Bristol manufacture.

B. CLAYTON SKELLY The Bristol Company Waterbury 91, Conn.

Editor, Western Industry:

I had the pleasure of reading a description of the ion-exchange process as covered in the January issue of your famous journal. It is interesting and well-done, especially in respect to illustrations.

However, there is a slight historical omission. The writer is evidently a youthful man and he credits the Great State of California with the origin of the revolutionizing development. I can well appreciate this as I am to some extent a Californian myself.

I believe the article should have included mention of the work of Henry Vallez.

DAN GUTLEBEN San Francisco 12, Calif.

(Editor's Note—Our article stated that "A Westerner was one of the pioneers in the field." While there is no question that Vallez was a (Continued on page 35)

### EDITORIAL

#### Haste Makes Waste

RE WE going too fast in disposing of surplus war property? War Assets Administration reports that well over one-third of its surplus disposal job was completed by the end of last October. WAA had \$15,200,000,000 in its recorded inventory at that time, with estimates of some \$12,000,000,000 more still to be declared surplus by the owning agencies. In October, property disposals totaled \$618,000,000, and at that rate the entire surplus would be cleaned up from two and one-half to three years; provided, of course, that there was no delay at the end because of slow-moving or unsalable stuff.

Where the sale or lease of war plants sets private enterprise in operation, obviously the millions sacrificed by the government are of no lasting importance, because they are soon offset by taxes generated from the turning wheels of industry. But in the case of other property, it seems that re-examination of the situation would be desirable, to determine whether a more deliberate approach would

give the government a far higher rate of recovery.

In many instances, the WAA staffs simply do not have time to ascertain whether customers can be found who will pay more; often material of considerable value goes for scrap or junk, through no fault of WAA. In the last issue of Western Industry, it was reported that the Spruce Production Corporation, organized to get material for aircraft production in the first world war, just wound up its affairs the other day with all money appropriated by the government returned, plus payment of one per cent on the capital stock and a profit of \$2,000,000.

Probably the government lost money in other cases, but the possibilities are worth investigating. The initiative must come from our new Congress, because WAA is now only carrying out the

policy of quick disposal urged by the last Congress.

#### Returning Chickens

UNEMPLOYMENT insurance chickens seem to be coming home to roost. When Western Industry took occasion recently to criticize the rather "soft" policy apparently pursued by Western states in paying claims, unemployment insurance commissioners in Washington, New Mexico, and Utah objected strongly to our editorial. To let them defend themselves, their letters were published in our "Mailbox" column.

One basis for our editorial was the caustic criticism from a former unemployment insurance commission attorney in another Western state of the conditions he had directly encountered. And now a legislative investigation in Washington reports \$150,000 in false claims and overpayments in eight years, the California commission announces it is going to be more tough in settling claims, and bills calling for tighter administration are being introduced in state legislatures.

Evidently the force of public opinion is beginning to clean up

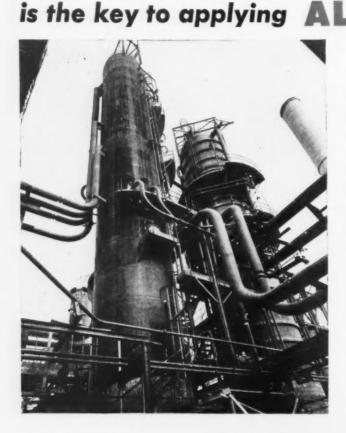
the situation in states where a clean-up is needed.

#### **Industrial Road Signs**

LET US hope Congressional economy does not crimp the splendid statistical job on industrial production in which the Census Bureau is now engaged. This unit of the Department of Commerce has made valuable use of its time, manpower, and money since the war ended, and already is gathering and issuing monthly or quarterly figures on commodities of all kinds, in as complete form as practical and with the number of products covered continually increasing. These are important guide posts to all industrialists who take time out to study and utilize them.

### Experience

# oplying ALLOY LININGS



In no other steel fabricating operation is experience so important as in applying alloy linings. Each alloy presents its own welding problems calling for specialized techniques.

For the past 15 years, Western Pipe & Steel has made a specialty of this phase of steel fabrication. Today, Western alloy-lined tanks and vessels are being used in petroleum refining, chemical, food processing, distilling and other industries throughout the West—wherever specifications call for the control of corrosion and high temperatures.

Unmatched facilities and an experienced staff of technicians and engineers enable Western to fabricate a wide range of steel products and to contract for installation and erection.



For almost forty years Western Pipe & Steel has taken the lead in pioneering methods for improving the quality of steel fabricated products. Concerning alloy and rubber linings, or any of the Company's many products and services, write or call your nearest Western office.



Interior view of 90-foot, alloy-lined refinery tower. Alloy strips are seam-welded.



One of fabricating bays showing refinery towers and pressure vessels under construction.

### WESTERN PIPE & STEEL COMPANY of CALIFORNIA

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BAKERSFIELD, FRESNO, SOUTH SAN FRANCISCO, TAFT, CALIFORNIA; PHOENIX, ARIZONA

#### MAIL BOX (Continued from page 33)

pioneer in ion exchange he was not mentioned in the article simply because its object was to report the latest developments which have been carried out to a successful conclusion here in the West in Western sugar plants by the Western firm mentioned.)

Editor, Western Industry:

The article on the purification of sugar juices by ion exchange in your January issue was most interesting, very well prepared and attractively arranged.

We would like to have some extra reprints

of the article.

O. A. DECELLE Vice President Infilco Chicago 16, Ill.

#### Politics Still of Interest

Editor, Western Industry:

It has taken me a long time to say so, but I did read with interest and profit Mr. Herron's articles on the influence of the Congressional election on the position of industry in the West at Washington. Having spent some six years as one of the then, unofficial, "whips" on the floor of the Senate, I know how true the position taken is. Too bad the voters paid so little attention to it.

WALTER MITCHELL Rancho Santa Fe, Calif.

Editor, Western Industry:

I found Mr. W. G. Herron's three articles exceedingly interesting and illuminating.

WALTER H. BLUCHER Executive Director American Society of Planning Officials

#### He Likes Us

Editor, Western Industry:

I enjoy Western Industry very much, and get a great deal of valuable material from it. However, I do think that the statistics are for the most part outdated by the time of publication.

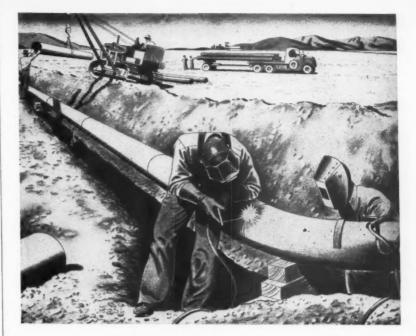
> FRED P. GEIBEL Mastercraft Company Los Angeles 11, Calif.

#### More to Come!

Editor, Western Industry:

I desire at this time as president of the Pomona Mining Co., Inc., to point out that in addition to our mining operations in the Santa Rita and Baboquivari Mountains in Arizona (see Western Industry, February, 1947, p. 84), we are now operating the emerald mine located in the Huachuca Mountains, Cochise County. We have built a new road from Ramsay Canyon to Brown Canyon, and then up the mountain side to elevation 7,496 feet, a distance of four miles. We have also built bunk-houses, blacksmith shop, cook house with electric installation, using a No. 8 bulldozer with an 11-foot blade for road making. Still further, we are now getting ready to mine cerussite for shipment east from another property we have recently acquired in the southwestern area of Arizona.

Major A. J. Terrill, President Pomona Mining Co., Inc. Hereford, Arizona.



# NATURAL GAS INDUSTRY'S MIRACLE FLAME

In Northern California's industrial establishments, Natural Gas meets practically *every* heating requirement. Acceptance is so widespread that this company's facilities are constantly being expanded to meet service demands.

FLEXIBILITY — CONTROLLABILITY — SPEED — UNIFORMITY — ECONOMY — these are several of the inherent qualities of Natural Gas which endow it with almost miraculous heating properties. Its versatility of application makes it easily adaptable to industrial heat-treating processes.

New Production problems requiring the application of heat occur constantly as industry strives to meet the demand for all kinds of products. Our gas engineers are engaged daily in helping to solve these problems. The advisory services of these engineers are available at your 'phone call.

P.G. and E.

Pacific Gas and Electric Company

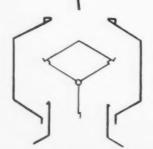
WI 201-347



### continuous Roof Ventilator

Here is a freshly designed continuous or ridge type ventilator that eliminates objectionable features and adds new highly desirable advantages to roof ventilation. It gets the air out of buildings quickly and efficiently under all weather conditions. It has no angle or bar braces, nor other impediments to efficient exhaust flow. It can be installed on any type roof in any length desired—always providing 100% exhaust opening per size. They are extremely easy to handle and economical to erect. And available in sizes from 6" to 24" throat openings.

PLASTEEL AIR CONTROLS are usually furnished in PLASTEEL—the permanent material that never needs painting or repairs... because it withstands severe industrial atmospheres—fumes, smoke, mineral dusts, salt spray, etc.



exclusive features 100% exhaust openings per size of ventilator. 100 feet of 12-inch Air Control provides 100 sq. feet of clear exhaust opening—not impeded by any structural members. Other sizes proportionately.

Y Damper provides free flow exhaust. Thus highest efficiency is maintained.

Drainage gutters guide rain to ends of units where it is drained onto the roof. Water does not pour over sides of ridge caps and impede building exhaust during rain storms.

No interior angle or bar bracing is used. Greater strength and rigidity are obtained and nothing impedes the exhaust flow.

Individual units are 8 feet long. Entirely self contained. Can be used singly or continuous in any length desired.

Plasteel Engineers will be glad to make you on any ventilation problems
Write, Wire or Phone for Complete Information Today



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#### Employment Picture (By C.D.E.)

NEMPLOYMENT has increased sharply but may have reached its seasonal peak in mid-January. Many of the non-industrial areas in the region report practical stagnation in the labor market and for the first time in four years sawmills in the Northwest as well as mines in southern Arizona have reported lines of job applicants at their gates. A sharp drop in turnover and absenteeism has occurred in such areas accompanied by a noticeable increase in productivity.

Preliminary indications are that January employment will range lower than December totals in most parts of the region with lay-offs of Christmas help and postal employees more than off-setting the scattered employment increases in the nonseasonal industries.

Relative seriousness of unemployment in the individual states in the region is best indicated by the following figures representing the ratio of insured unemployment on specified dates to the estimated total labor force in 1945.

	Oct. 12, 1946	Jan. 11 1947
United States Total	3.1 %	3.6%
11 Western States	2.9	5.1
California	3.7	5.7
Oregon	1.6	4.3
Washington		7.0
Arizona		2.7
Colorado	.93	1.9
Idaho	.32	2.4
Montana		2.7
Nevada	1.6	2.8
New Mexico	1.4	2.8
Utah	1.6	3.2
Wyoming	.34	1.3

Most significant is the indication that, while unemployment in the 11 Western states increased by about 75 per cent between mid-October and mid-January, and is now above the national average, the January total (5.1 per cent) contains little cause for alarm. Many economists have maintained that 5 per cent should be allowed for the normal unemployment "float" which would exist even under full

employment conditions.

Most striking, also, is the extremely low unemployment ratios evidenced by the Mountain States. Apparently these low ratios reflected both the lack of industrialization (agricultural workers are not subject to Unemployment Compensation Laws and hence are omitted from the insured unemployment figures) and the fact that the area contained relatively little of the war expanded employment typical of the West Coast shipyard and aircraft centers. (Note: These comparisons between states should be used with caution since some variations arise from legal and administrative differences.)

Around the Region - Spokane: Unemployment has increased substantially because of the influx of workers from logging and agriculture operations which were closed down in adjacent areas during the winter. Non-ferrous metal employment will continue to increase and next season should bring practically full employment with significant labor shortages.

Portland: Unemployment increased sharply primarily because of seasonal employment reduction. Little prospect exists for the reduction of the large labor surplus before spring.

Seattle: Reversal of downward trend in shipyards added 2,000 to the employment totals and aircraft, another 1,000 in the last two months. Still a large labor surplus area, however, with insured employment above the 20,000 mark. Little improvement expected until lumbering and construction expand in April.

Salt Lake City: Employment has been expanding and is expected to continue upward if consumer's goods become more plentiful and new equipment and ma-

chinery become available.

Los Angeles: Year-end inventories, material shortages, and general uncertainty contributed to lay-offs and hiring delays; and total employment declined slightly for the second successive month.

San Francisco: Unemployment after rising steadily through November and December, increased another 25 per cent in January as lay-offs in government shipvards and retail stores caused a sizable employment decline. The large labor surplus will not be reduced materially before

Wyoming: Employment reached its alltime high last August but has since declined seasonally. The situation is still better than a year ago although the increased employment since that time has been accompanied by a slight increase in unemployment due to the increased labor force.

Employment outlook still consists of relative stagnation until late March. Employment in retail trades may taper off more than seasonally in view of the declining sales trend (see chart below). A big question mark is the construction industry on which dependence has been placed as a source of next year's employment boom. Several recent indicators point to possibility that the construction boom

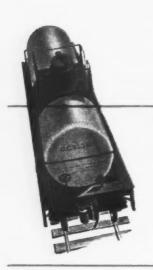
(Continued on page 85)

19.0 27.1

59.6 67.3

	Estim	ated Nu			yees in N	on-Agrica	NUFAC					Source:	U. S. Bu	reau of				
	1945	TANA 1945	1945	1946		MING	COLOR			MEXICO		IZONA		TAH		VADA 1946	1945	L MTN. 1946
August		16,400	17,200	19,60		6,200	1945 57,800	1946 55,600	1945 8,600	1946	1945		24,900	24,603	1945 2.800	3,200	151,400	146,460
September		16,500	15,600	19,50		5,900		56,500	5.100	9,300	21,700 13,500		20,700	28,999	2,600	3,200	117,600	151,399
October		17,700	17,200	19,80	0 6,100	6,400		57,100	8,400	10,300	12,300		19,900	27,770	2,600	3,100	132,800	154,970
November		17,700 17,600	17,500 $16,200$	21,70		7,000		58,700	8,500	10,200	12,400	12,700	13,600	27,830		3,300	128,100	159,260
December	10,000	11,000	10,200	20,900	5,700	6,600	51,400	56,600	8,500	10,300			28,500	27,710	2,700	3,200		
					WASHIN	GTON		OREGO	V	CAL	IFORN!	A	TO	TAL PAC	IFIC			
					1945	1946	1945		1946	1945		1946	1945		1946			
			st		253,100	163,500	163,20		127,600	888,50		33,900	1,304,8		,025,000			
		Octob	ember		199,200	167,900	142,30		29,100	742,00		30,600	1,083,50		027,500			
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	Ariz.	Colo.	Idah	0	Mont.	Nev.	N. A	fex.	Utah	Wyo		otal Mtn.	Cali	if.	Ore.	Was	h. T	otal Pacific
November 2	4.6	4.1	1.0	)	3.0	1.2	2.5	9	4.2	.3		21.3	156	9	12.0	35	1	203 3

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YOUR NEW PRODUCT? Investigate whenever an inexpensive, water-soluble aluminum compound is needed as a raw material or intermediate.



SOAP MANUFACTURE For glycerine recovery.



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As an astringent in preparation
of deodorants.



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General Chemical Company, Baker & Adamson Division, announces the West Coast production of Aluminum Chloride Solution at the Company's El Segundo, California, Works.

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## THE WESTERN OUTLOOK...News...Statistics.



#### Commerce-Banking

A general upswing in the movement of nearly all commodities throughout the West is pre dicted in the latest forecasts of the regional shippers' advisory boards.

For California, Nevada, Arizona and western New Mexico, expected carloadings in the first quarter of 1947 are 18.8% above a year ago; in Oregon, Washington and northern Idaho, in southern Idaho, Utah, Wyoming, Colorado and Nebraska, 9.7%.

In the first-named territory, the outstanding commodities are automobiles and trucks, 111.2% increase; paper and paper products, 92.5%; agricultural implements and farm vehicles, 90.2%; non-ferrous metals, 71.5%; machinery and boilers, 66%; lumber and forest products, 56.5%; canned and packaged foods, 55.9%; iron and steel, 46.2%; ore and concentrates, 31.7%; frozen foods, 26.2%. The few decreases are in some agricultural products.

Pacific Northwest increases are more diverse, but less striking. Leading the list is iron and steel, 40.8%. Others are poultry and dairy products, 37.1%; non-ferrous metals, 36.8%; brick and clay products, 29.4%; grain, 24.2%; lumber and forest products, 20.7%. The only industrial items expected to decrease are coal and coke, 12.6%; petroleum and its products, 4.1%.

In the central area mentioned above, several remarkable increases are forecast: fertilizer, 214.9%; iron and steel, 163.7%; ore and concentrates, 132%; non-ferrous metals, 125.7%; chemicals and explosives, 98.9%.

#### FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states.

(Compiled from Assn. of Am. R.R. weekly reports)

	Carlo	adings	Receive Eastern C	d from onnections
	1945	1946	1945	1946
September .	 595,143	606,037	310,868	305.872
October	 617,023	667,851	313,964	328,082
Norember .	 535,620	731,456	278,746	366,315
December .	 586,302	487,495	240,906	258,838
	1946	1947	1946	1947
January	 468,913	508,343	240,907	260,660

#### BANK DEPOSITS

(In millions of dollars-adjusted)

Daily average for month, all member banks in 12th Federal Res. Dist. Demand deposits excluding U. S. Gov't deposits, each items in process of collection, and interbank denosits.

Capit	1100	C.E.	885	9	2			30	^	,		•	u	•			Na.		9-1	ı	44	9	-	Demand Deposits	Time Deposits
August																								8,397	6,992
Septemb	er			0		۰	۰						۰		٠									8,547	5,607
October				9		0	0	0		0	0	9				0		0			0			8,617	5,662
Novembe																								8,737	5,714
Decembe	r			0										0			0							8,856	5,705

#### BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Fed. Res. System in 7 Western cities: L. A., S.F., Portland, Seattle, Tacoma, Spokane, and Salt Lake.

							U	A	W.	et.	a	gı	ĸ.	0	Ŧ	3	W	E	u	١E	51	34	Ŋ	re	ij.	01	rı	3	,								
August 1	9	4	6																																	81	1
Septembe	P																																			89	6
October																																				98	1
November																			۰	۰				۰	۰				۰	۰	۰	۰		4		1,07	4
December						0												0							۰			9							,	1,10	6
January,	1	19	14	ľ	Ī							0		0	0	0		0	0	0	0	0	0	0	0											1,13	1

#### INDEX OF DEPARTMENT STORE SALES

sailed by Hederal Pererce Rock

						mm	OF WOOD ?		w/~~~~~~~~	Compace	07 L	m 1/000100	The state of the			
	Fed. Re		Souti Calife		Nort Calif		Por	tland		stern hington		Fashington bern Idaho		h and rn Idaho	Phoe	mix
August September October November December	1945 231 232 245 272 256	324 313 319 319 317	1945 231 238 265 297 270	330 327 349 355 339	1945 212 221 224 246 227	1946 288 285 284 287 274	1945 211 229 227 242 236	1946 301 295 288 287 299	1945 275 260 281 308 301	1946 364 337 353 347 366	1945 232 224 200 209 229	1946 325 296 276 258 306	1945 257 232 228 261 241	1946 364 319 301 289 305	1945 324 293 261 310 293	1946 444 435 846 365 364

#### WHOLESALERS' SALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

			-						ACIFIC									
	Automotive Supplies	Change	Electrical Goods	Change	Furn. and house furn.	Change	Groc. and foods exc. farm prod.	Change	General Hardware	Change	Industrial Supplies	Change	Lumber & bldg. mat.		Achy., equip. and supplies excl. elec.		Metals	Change
July	2,963	+42	6,797	+ 65	1,691	+ 79	8,982	+14	5,519	+43	1,807	+ 5	964	+31	782	+20	611	
Ang.	3,244	+41	8,506	+103	1,338	+ 40	9,758	+16	7,359	+53	2,122	+ 9	1,045	+18	421	- 1	705	+34
Sept.	3,433	+52	8,084	+140	2,600	+ 85	10,250	33	5,869	+65	1,913	+30	1,070	+47	571		688	-91
Oct.	1,506	+23	8,878	+117	434	+117	13,286	+23	4,990	+73	2,117	+48	882	+41	823	+66 +18	680	+91 +51
Nov.	3,135	+33	9,691	+130	2,262	+ 3	10,065	+17	5,353	+49	1,962	+45	1,215	+100	549	+49	766	-66
					MOUNTAIN	1												
July	885	+62	1,702	+ 92	367	+ 50	4,248	+38	1,555	+58								
Aug.	940	+66	1,772	+117		,		100	1,481	1.69								
Sept.	989	+57	1.954	+139			5,373	+51	1,616	+62 +78								
Oct.	815	+84	1,939	+127			5,698	+44	1,832	-56								
Nov.	788	+25	1,999	+105			4 004	+23	1.674	+56 +54								

#### **Power and Fuels**

All previous highs were topped in the winter peak of power demand last December. Industrial, commercial and residential loads all contributed proportionately.

The Pacific Northwest power pool of public and private utilities has agreed on a program to be presented to Congress, calling for more federal development of hydro power by 1953 to meet the needs of heavy and light industry which present facilities cannot supply. Deliveries by the power pool recently reached an hourly peak record of 2,574,000 kw., compared with a war peak of 2,233,600 kw., and within 150,000 of total estimated reserves.

In oil production, the week of January 22 was the highest since the end of the war in the Pacific Coast area, with 900,200 barrels produced daily. Although no fear is felt over supply, increasing cost of developing reserves is a troublesome problem, having risen from 29.6c a barrel to 72.9c in the last 10 years. The quality of new discoveries also is much poorer than formerly, and there are only about 3,000 un-drilled locations in California, compared with the present 25,000 wells.

#### **ELECTRIC ENERGY**

(Production for Public Use-In thousands of kilowatt bours. Source: Federal Power Commission)

	Moun	tain	Pacific Non	thwest	Calif	fornia	Total I	Pacific
	1945	1946	1945	1946	1945	1946	1945	1946
Sept	958,475	924,999	692,146	1.109.086	1.852,794	1.547.003	2,344,940	2,656,089
0et	1,024,987	992,528	1,024,917	1,121,333	1,263,068	1,523,254	2,287,985	2,774,597
Nov	862,427	937,678	1,003,510	1,302,623	985,017	1,443,167	1,988,607	2,745,790
Dec	878,095	999,066	1.020.513	1.396.863	1.108.091	1.489.739	1.026.147	2.886.602

#### PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)
(From Bureau of Mines)

TOTAL DELIVERIES (Thousa barrels daily)

CRUDE PRODUCTION **GASOLINE** ALL PRODUCTS (Barrels, daily avg.) 1946 & DIESEL FUEL OIL 1945 1946 1945 1946 1945 1946 1945 1948 363 269 318 320 400 954 897 866,684 293 128 418 363 901 896 265 117 479 969

#### BITUMINOUS COAL AND LIGNITE

(In	Price	ds of tons. Area 6 N. Mex.)	Price	wreau of A Area 7 -Utah)		Area 9 (ana)		Area 10 - Alaska)
	1945	1946	1945	1946	1945	1946	1945	1946
September	. 700	670	1.237	1.335	317	352	119	123
October	. 865	829	1.496	1.529	345	415	149	149
November	802	551	1.508	1.096	379	324	142	101
December		074	1 979	1.010	201	9.05	110	100



# Best by far for high-speed production

In today's fast-moving production work the modern battery-powered truck has no equal. The development

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## THE WESTERN OUTLOOK.. News... Statistics...



#### Metals

Hottest development in the metals industry in the West revolves about the long-awaited steel rate reduction from Geneva to the Pacific Coast, which has precipitated an attempt by eight competing steel companies, the Spokane Merchants Association and the intercoastal water carriers to prevent the rate becoming effective March 1.

Hearings before the Interstate Commerce Commission were in progress at the time of going to press. Protestants included Bethlehem Steel Corporation and Bethlehem Pacific Coast Company, Kaiser, CF&I, Sheffield, Jones & Laughlin, Weirton and Republic.

Strangely enough, they were not joined by Inland Steel, who protested the reduced truck rate which U. S. Steel asked for prior to its request for lower rail rates. Some observers thought that Inland "had enough."

#### IRON AND STEEL

			United States			Output	Carbon Ingots, Hot Topped*
From Am	Pigiron	Percent of	Institute (in Steel	net tons) Percent of	May 1946	2,548	6,499
	Output	Capacity	Output	Capacity	June	1,992	6,284
May 1946		35.2	237,759	57.2	July	4.162	4,823
June July	104,808 113,233	44.9 47.1	248,378 237,626	61.7 57.3	August		9,167
August	121,105	50.3	265,040	63.7	September	4,899	2,691
September	112,527	48.3	254,775	63.4	October	7,892	10,018
October	109,809	45.6	271,889	65.4	November	7,529	6.861
November	127,986	54.8	262,913	65.3	December	4,355	. 13,675
December	149.589	62.2	294.019	70.9	*Included in total steel.		

#### COPPER

(Short tons, From U. S. Bureau of Mines,

VITRIFIED

	ARIZ	ONA	UT	AH	MONT		NEW M	EXICO	NEV	ADA		AL II
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
May	26,000	16.350	20,900	500	8,613	4.800		3.906		4.350	65.235	30,682
June	24,110	15,800	19,771	400	8.218	4.700		3,993		4,675	64,201	30,643
July	22.055	25,950	19.826	12,350	6.651	4,900		4.416		2,100	57,176	51,027
August	22,100	26,475	18,478	13,780	6,340	4,950		4,098		3,300	57,088	53,481
September †	21,250	28,000	19,177	17,350	4.061	4.700		3,961		3,400	54,233	58,203
September	21,250	28,650	19,177	17,400	4,061	4.700	*	4,085		3,400	54.233	59,031
October	22,000	30,650	17,900	17,700	7.100	4.800		4.195	*	3,600	38,075	61,770
November	23,000	28.300	16,000	17,425	6,600	4.800	40	4.000	*	4.200	55,539	59,498
December	23,000	30,300	15,300	17,800	5.455	4.850	-	4,100	-70	4,400	53,964	62,245
* Incli	uded in t	otal.										

#### CEMENT

(In thousands of bbls.; from U. S. Bureau of Mines

					Colo	Wyom.
	—Calif	iomia—	Oregon	- Wash.	Utah -	Idaho
	1945	1946	1945	1946	1945	1946
Jan.	1,258	1,159	269	234	173	233
Feb.	1,191	1,355	243	250	95	109
Mar.	1,226	1,629	250	298	122	245
April	1,257	1,670	268	432	130	356
May	1,396	1,745	238	397	273	413
June	1,439	1,684	303	437	305	386
July	1,538	1,690	278	504	317	391
Aug.	1,475	1,668	288	495	354	398
Best.	1,364	1,683	305	530	296	395
Det.	1,421	1,829	315	490	295	409
Nov.	1,211	1,793	299	354	333	349
Dec.	1,174	1,757	286	376	320	374

#### STRUCTURAL CLAY PRODUCTS

UNGLAZED

UNGLAZED

		(in thous	ands of	STRUCT TII (short		CLA SEWER (short	
		Mountain	Pacific	Mountain	Pacific	Mountain	Pacific
Aug.	'46	15,705	31,474	2,250	4,970	1,641	9,865
Sept.		13,508	22,080	2,397	4,315	1,604	10,599
Det.		11,672	21,742	1,969	3,770	1,652	10,698
Nov.		11,728	18,929	2,683	3,014	1,496	10,753
Dec.		9,546	13,875	1,423	3,275	1,800	11,832

#### **ASPHALT ROOFING**

(Ariz.,	Calif.	Idaho, Nev.,	Ore., Utah, Wash.)	
		ASPHALT	SATURATED FELTS	
			es) (Tons of 2000 lbs	.)
Sept. 1946		657,881	5,087	
October		778,434	5,524	
November		707,262	5.131	
December		787,815	4,768	

#### **Building Materials**

Crowded production schedules for at least the first half of the year face structural clay products manufacturers. Interior tile is in a worse supply position than other items. Brick manufacturers are getting back into a better labor situation, now that wage ceilings are off and they can pay \$1.20 instead of 80c. Production will not reach peak levels until summer when field kilns can be used.

Alloy Steel

The long-awaited lifting of the embargo on exports of cement has finally arrived, subject to domestic priority. It provides a winter outler when domestic operations are shut down.

#### Food products

Supply finally caught up with demand in the Pacific Coast meat industry late in January, the back-up in dressed meat being especially heavy in beef. Supplies were reported more plentiful than at any time in the last three or four years. Wholesalers had lots of lard in their coolers. The demand for hides has been off since the first of the year.

Bad weather which made loading of raw sugar difficult in Hawaiian ports in the weeks following the three-months plantation strike has added insult to injury for cane sugar refiners. Nevertheless, C&H managed to accumulate enough raw to justify reopening its big refinery at Crockett, California, the middle of February. Western has been running on a reduced scale since January 6.

Flour mills in the West expect to keep running at capacity all year, despite the fact that domestic buyers have been inclined to hold off in expectation of lower prices. Government and private purchasers for export demand keep the supply cleaned up. The strength of the millers' position is indicated by the fact that the June 1, 1945 carryover, when foreign countries were not purchasing American flour to any extent,

was 100,000,000 bushels, while the U. S. D. A. forecast for next June is only 93,000 bushels, with all the world in the market for flour.

Canners and growers of California cling peaches are taking comfort in the fact that the January 1 carryover was the lowest since oversupply first began to be a problem, and that it was lower than the June 1 carryover in five out of the six years immediately preceding the war.

Southern California tuna pack of 4,450,000 cases is an all-time high, due to huge increase in number of tuna clippers operating. Estimates for 1947 are for a 6,000,000 case pack.

#### **Lumber-Wood Products**

Douglas fir sawmills, which exceeded 6,000,000,000 feet in their 1946 output, enough to build 300,000 homes, expect to add another half billion feet to the output in 1947.

Rocky Mountain Empire forests yielded a

Rocky Mountain Empire forests yielded a record cut of 179,631,000 feet last year, 36% above 1945.

#### LUMBER

(In thousands of board feet)

From West Coast Lumbermen's Association (Douglas Fir, Sitha Spruce, Port Orford Cedar, West Coast Hemlock, Western Red Cedar):

Jan.
1944 1945 1946 1947

Production 7,902,289 5,909,753 6,133,409 584,756

From Western Pine Association figures (Idabo White Pine, Ponderosa, Sugar Pine and associated species): Year through December 1945 1946 1947 Production 2,410,474 2,485,765 210,710

#### SOFT PLYWOOD

From Bureau of the Census (In thousands of square feet)

												1945	1946
July												85,579	95,747
August .												113,633	126,974
September		,										89,398	126,974
October .											*	67,014	149,600
November											*	58,237	129,635
Dosombon												77 100	100 070

#### PULPWOOD

(Pacific Northwest)
(Cords of 128 cu. fs., roughwood basis.
Source: Bureau of Census)

	Receipts	Consumption
June. 1946	426,000	243,703
July	469,472	281,768
August	561,270	239,861
September	520,240	228,672
October	476,936	253,050
Vovember	310 180	247 019

#### THE PICTURE

Latest developments in the statistical picture of the West, compared to the month last reported, include the following:

Employment (Dec.) slightly down Unemployment (Dec.) seasonal up Freight (Jan.) carloadings up Bank Deposits (Dec.) still rising Bank Loans (Jan.) slight increase Department Store Sales (Dec.) slight change

Electric Energy (Dec.) output up Coal (Dec.) up in Colo., N. M. and Mont.

Iron and Steel (Dec.) 5.6% increase



Los Angeles is the newest of twelve key points from which Ryerson serves the nation's principal steel markets. In a new plant, equipped with the most modern cutting and handling facilities, experienced specialists are ready to work with you on your steelfrom-stock requirements.

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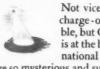
4-Way Floor Plate • Reinforcing Bars • Bolts • Rivets • Babbitt • Metal Working Tools and Machinery, etc.



#### WESTERN INDUSTRY FOR MARCH, 1947

**VOLUME XII** 

NUMBER 3



Not vice - presidents - in - charge - of - stirring-up-trouble, but Old Man Overhead is at the bottom of the international oil skirmishes that are so mysterious and suspicious to the lay-

man, according to R L. Minckler, vicepresident of General Petroleum Company.

Because the weight of oil makes it cost so much to handle, any interruption of movement boosts the cost up to where it may become unprofitable. Red ink is the lurking danger that spurs the oil companies on, and the problem is one of chemistry and physics, not politics.

Pacific Coast users need have no fear that oil is going to cost them too much. Bunker oil is \$1.30 a barrel against \$1.92 in New York and \$2.52 in Chicago. Coast users have the edge in fuel costs. In terms of million b.t.u.'s, oil is 21.8 cents per million on the Coast, as against 26.9 cents for coal in Chicago, and 27.7 cents for coal in New York.

Unfortunately for California industrial users who have been getting the biggest fuel bargain of all, namely, natural gas, this product is no longer a surplus commodity to be dumped on the market. Conservation measures, such as recycling to bolster up old fields, plus the tremendous demand caused by California's population growth, are cutting down the per capita supply, and the current investigation by the California Public Utilities Commission will likely eliminate a lot of give-away rates. But even so, natural gas will still be the biggest fuel bargain for gas purchasers.

#### Lamb-Lion Harmony

When public ownership lions lie down together with private enterprise lambs (it used to be private enterprise lions and public ownership lambs), that's something. But the day is here already, believe it or not, for public and private electric power utilities of the Pacific Northwest, who have fought each other bitterly for years, are unitedly asking Congress for more federally-built power dams to meet the needs of heavy industry moving into that region. Details of the agreement may be found on page 73 in this issue.

Can the lions and lambs of labor and management lie down together, too? Yes, that has happened, for "Slim" Connelly, who engineered the bitter CIO strike at North American Aviation in 1941, and "Dutch" Kindleberger, president of North American, got so they would fly from Los Angeles to War Manpower Commission labor-management committee meetings in San Francisco in "Dutch's" plane, although at first they would hardly get into the same elevator with each other.

#### **Easterners More Alert**

Industry in the West has not been as responsive to the opportunity offered by the Army to inspect German industry first-hand. Only a dozen companies on the Pacific Coast, at the most, have sent men to Germany, whereas over 600 Eastern firms have had representatives over there.

Talk of returning the seized plants to German control about the middle of the year leaves the remaining time rather short, according to W. Wallace MacLean, technical consultant in the San Francisco office of the Department of Commerce. Preliminaries to clearance take about six weeks, and the investigation tours about three

But the information to be gained from German industry sounds enticing. For example: Cutting machines for work on large metal plates; flame-hardening machines adaptable for special purposes; a blowpipe for deep, under-water metal cutting; artificial sillimanite to replace Indian kyanite; a series-type cell for producing chlorine

commercially; methods of spinning short asbestos fibres to name just a few of them.



#### Sugar on the March

Sugar, which has been recognized only as a sweetener

for lo these many years, is about to don a new dress. Basically, a pure organic chemical, it has been ignored in that guise.

But now it is about to trip out in industrial garb. Mixed with other materials it makes an amazing synthetic varnish which is resistant to water, alcohol and even sulfuric acid and varnish remover. Let a cigaret burn down on your table and the wood will be charred but the varnish remains unscathed. So says Dr. R. C. Hockett, scientific director of the Sugar Research Foundation, in an interview with Western Industry. Incidentally, a pilot plant for its manufacture is about to be set up.

Mono sodium glutumate, a food flavoring made from the end products of sugar beets, which will be produced commercially at International Mineral & Chemical Co.'s new San Jose plant, is an example of a by-product which has already reached commercial application.

And levulose, one of sugar's chemical components which scientists subsidized by the Foundation at the University of Colorado, have succeeded in isolating, would seem to be opening up a new world for its industrial use as well. Yes, sugar is going places in the industrial world.

The Sugar Research Foundation has other projects as well, not the least of which are a study of by-products of beet and cane sugar plants. A pectin derived from beet pulp has been developed at the University of Wyoming which is efficient as a thickening agent for textile sizes, dyes and printing inks. Cattle will be fattened on alfalfa and hay to which has been added sugar beet molasses-it is just as nutritious as old-time corn silage, the scientists find.

# AMMUNUMUS FOR PACE

# Gonveyer Service

#### FOR PACIFIC COAST INDUSTRY

To meet the requirement of Pacific Coast industry for a complete, dependable conveyer service, Mathews Conveyer Company West Coast has adopted a new sales policy, and has greatly expanded its facilities for manufacturing conveying equipment for both light and heavy industry. Sales of Mathews Conveyers have been placed on a direct company-to-customer basis, making it possible for the customer to work directly with a Mathews engineer who has had years of experience and training in the design and application of conveying equipment.

The construction of a new, modern plant at San Carlos has been completed, and the building has been occupied by production and office personnel. The general office staff at San Carlos is well-known to many Pacific Coast manufacturers. P. W. Brown is Manager of Sales; C. A. Penberthy is Secretary-Treasurer; Roy Shoop is Field Engineer; Norton Meyer is Chief Engineer; E. G. Spraker is in charge of Estimating; Ray Blair heads the Order Department, and James J. Smith is Plant Superintendent. Each of these men has had long experience with Mathews methods and Mathews equipment.

The engineers in the field offices at Los Angeles, Portland and Seattle are not new to Mathews customers in their respective areas. These men are well equipped with experience and training to render efficient field engineering service.

When you need help with a conveying problem, keep in mind that Mathews Engineers are in a position to give you a service which is complete from proposal engineering through erection in the field. In addition to their wide experience with West Coast industry, they have at their immediate disposal the experience acquired by nearly half a century of operations at the eastern plant at Ellwood City, Pennsylva-

nia, and the Canadian Branch at Port Hope, Ontario. The benefit of this wealth of material handling experience is now available at Mathews Conveyer Company West Coast.



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# TRAINING

# How to Turn Your Green Help Into Producers

TO TURN green help into experienced and qualified specialists suited to carry on its \$300,000,000 construction program planned for the next few years, Pacific Gas & Electric Co. has evolved a program which combines schooling and experience to meet its need for trained men.

The backlog of work for the company is larger today than it ever has been, yet enough men already trained to do this job are just not available. Not only must the company have sufficient trained linemen to string the transmission and distribution lines which are being added to the power system, but it also must have engineers able to predict accurately what the cost of those lines is going to be.

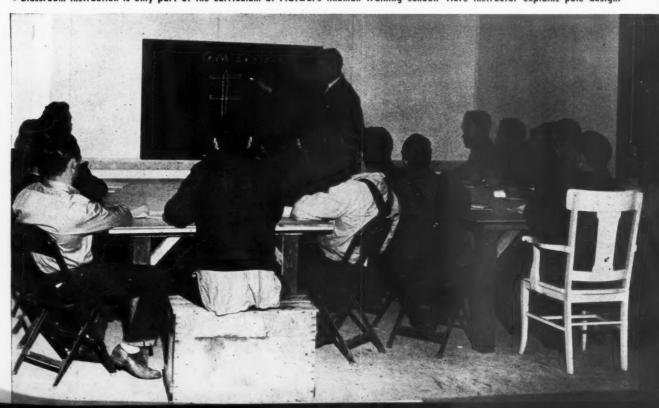
To supply these basic demands, PG&E has set up a lineman's school at Napa and an estimator's school at Sacramento. Instructors at the schools are men who know their jobs—experienced linemen and engineer-estimators. Books used in the classroom are for the most part written by

company men who are considered tops in their fields.

Estimators used to learn their trade by riding "tandem" with an experienced estimator, and by the mimicking process learn what was involved in estimating the cost of a line. But it was a slow process, and too many estimators were needed immediately to wait for the time-honored method of learning by experience.

So 16 men with engineering background
—some with college degrees in engineering, others who had quit before they got

• Classroom instruction is only part of the curriculum at P.G.&E.'s lineman training school. Here instructor explains pole design.





 Actual practice in climbing technique is taught each of the trainees at the lineman's school. Here the instructor shows student the proper angle to place his feet.
 By keeping the number of men under 20, the instructor is able to give individual aid.

their college degree, and still others who have just a "bent" for engineering and have taken technical training courses offered by the Pacific Service Employees Association, were selected for the first estimators' school held last August in Sacramento.

So successful was the school—not one neophyte failed to make the grade—that another school, attended by 22, was held in October, and still another attended by 20, was started in February, 1947.

At the estimators' school, each student studies a proposed project and prepares working drawings and preliminary specifications recommending the type of construction and materials needed. Then estimates of cost and time required for completion are prepared.

The courses are based on technical factors involved, but with a practical slant.

In other words: Here is the job. Here is what we do. Here is how we do it. Here is why we do it that way. Thus the practical step-by-step function of an estimator is explained to them.

The job requires a great amount of judgment. Each estimator has to be able to pick the shortest route by profiling or contour drafting, or perhaps the route may be determined by economical purchase of rights of way. He has to use judgment in selection of materials required, and in the problem of transporting materials and equipment to construction points. In estimating the time and problems involved in doing the job, the estimator will have to take into consideration the kind of country the line extension is going across.

In its estimators' schools, PG&E has found that by giving the men the proper tools with which to work — the technical

training — judgment develops simultaneously.

Instructors for the estimators' school are technical men from the Sacramento division, the general office engineering department and the various divisions. They are veteran or supervising estimators themselves, engineers, construction men or administrative division personnel. Each subject taught is assigned to an expert and mimeographed materials are prepared.

At the October school, L. J. Brundige, E. T. Woodruff, L. H. Scott, J. R. Thomas, M. P. Colony, D. Haight, A. Seidl, F. C. Hendershot, E. Rossi, C. E. Baugh, T. A. Bettersworth, W. R. Gielow, P. Suransky, A. A. Krieger, W. B. Frye, W. L. Greer, H. Payne and R. R. Cowles were instructors.

# Teaching The Trainee How To Estimate

For the most part the students are taught by the lecture method in this school, but classes are purposely kept small to provide individual instruction.

The first week the trainee has thrown at him the following subjects: The estimator and his place in the company; the estimate and its purpose; the pole line and its components; rights of way, crossing permits, etc.; joint poles, contacts and agreements; use of maps and inspection of warehouses; determination of primaries, secondaries and transformers; general order 95 (line construction standards and locating pole lines); accounting needs in the estimate and unit costs of construction; preparation of simple estimates; engineering problems of estimates; transformers, and the determination of sizes and connections.

The second week he gets a review of unit costs and line construction standards; construction standards of distribution, lines in rural areas, office and field routine of estimates; field and office practice in estimating, including how to obtain field data, and preparation of the estimate by the conference method, as well as how to prepare an estimate individually; street lighting, deferment of work, backlog of work, and the story on the estimate.

Other subjects are public relations and the customer, and the relation of the estimator to the sales department; the estimator's relations with the construction crew, together with class discussion on various subjects; voltage regulation and methods of correction and the summary of the course.

Upon completing the course, each graduate "junior estimator" is assigned to work with a line crew for a week so that he will get a practical feeling for construction problems.

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Then he returns to riding "tandem" with an experienced estimator until he has proved his capability to make the estimate himself. From then on, he is on his own.

### Making Trained Specialists of Green Linemen

The lineman's school treats the same problem—that of developing trained men to perform a specialized job. In this case, the company must have enough trained men to put into high gear its line construction program—to string the lines that will extend power to new customers of the company.

Under normal conditions, training and developing the lineman has been done right in the crew. He gradually gains the necessary experience from day-to-day observation of actual work and the performance of such work.

Advancement from groundman to that of linemen is set up normally under a minimum of  $3\frac{1}{2}$  years. He must spend a year as a groundman, and then it might be another three months before there is an opening to start training as an apprentice lineman. Once he becomes an apprentice lineman it will take another  $2\frac{1}{2}$ -year period of training before he would advance to lineman. It would normally be that long before he would meet up with all operations of the company.

The school for linemen spans that gap of time. Through the intensive training received in the two weeks at the school, it is entirely possible that a groundman could cut as much as six to nine months off his year spent as a groundman. This is especially true if the employee had Signal Corps experience during the war. Apprentice linemen, as well, are sent to the school because it makes it possible for them to advance more rapidly to the journeyman rate.

Because of the lack of sufficient number of trained linemen and the large amount of construction work looming ahead, the company has found it necessary to use crews made up largely of apprentice linemen where no live work is involved. Ordinarily, in stringing lines the men work the lines dead. The climbers are either two linemen or lineman and apprentice. They work together on the pole, and the groundman passes the material to them.

Trainees will not be assigned to the tough jobs—for instance those of tower men. These men are similar to steel workers on building jobs. They are specialists on handling high voltage tower lines and



• Student linemen take their pole-top training close to the ground for close supervision from the instructor. Here they are coached in how to tie a conductor to an insulator with live-line tools. The black rod attached to the pole is a "gin pole" which holds a live-line out of the way of workmen while an insulator is replaced.

linemen work into that job slowly. But the school does speed up their training on ordinary routine jobs.

The principal speed-up in the intensive training is along the lines of electric pole line work. Class instruction and actual performance by hand, under qualified instructors, is stressed at the school. The electric operating department and operating engineers of the company determined what should be taught the trainees.

Classes are kept small. Only 20 men are selected for each school so that they can receive individual training. The two instructors are thoroughly versed in their fields. One is now a line foreman with many years of experience. The other was a line foreman who is now assistant liveline supervisor. They explain the operation and show the actual items and mate-

rials, tools and equipment, that are used.

Visual training safety films show how to climb safely as well as how to apply resuscitation at the top of the pole. Text books for instruction are written by company men and are right to the point. The men do not have to wade through extraneous materials to get to the meat.

Then the men go into the yard to perform the operations with their own hands, using the actual tools and the materials which are normal for the job. The school has set up short simulated poles with traditional pole "hardware." Thus the men become familiar with the equipment with which they will work. The men only work six or seven feet off the ground, so that the instructors can observe their work personally. At every step they can be shown how each operation must be performed

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safely—for safety is one of the most important factors in line work.

The trainee learns that it is not only important to do the job, but also that it is important that it be done safely. They become familiar with the safety equipment provided by the company, although they will not work on live lines until they have had considerable experience.

When they emerge from the ground school, they no longer are novices. They know the terms of their trade as well as the tools with which they will work. No longer are they groundmen but "grunts," and a transformer has become a "pig" in their language. The fully initiated groundman never knows his line equipment by its catalog name.

No longer will the linemen have to "holler" at them when it is time to send up tools and material. They will know just by observation what they are going to need next. The whole process of stringing line will have been speeded up.

## Employees Want Training

For the most part, men selected to attend the school are younger employees who have been recruited by the company in recent months. A good many of them are returned servicemen. The supervisors in each of the 13 divisions of the company have observed the new men and have sug-

# A Company Philosophy to Inspire Workers

In the Trade Mark Room of Harbor Plywood Corporation at Hoquiam, Wash., is an 18-foot poster-mural which carries a basic thought about the business that is applicable to all industry.

applicable to all industry.

The room is used as a "briefing room," where weekly meetings of foremen with the superintendent, production manager and others are held, and semi-monthly meetings of all department heads with the officers. Problems, policies and objectives are freely discussed.

Here is the lettered text, which bears an enlarged replica of the signature of E. W.

Daniels, president:

"This represents the externals of your manufacturing and marketing enterprise. Back of it are over twenty years of toil, thinking, creative imagination, risks, initiative \* \* millions of dollars of invested capital \* \* an enviable record of development \* \* a priceless asset of good will \* \* experience \* \* a unique position in an expanding industry. The roofs cover processing and business machines, supplies, rec-ords, power lines, communication lines and safety mains. It is the address of a going concern \* \* a place of opportunity. Here one is free to pursue that dynamic urge that animates all American men and women 'to get ahead in the world.' To preserve this freedom \* \* this priceless opportunity \* \* each must assume his responsibility: to coordinate; to integrate; to cooperate; to harmonize; to synchronize \* \* for basically this is a partnership in which each is a trustee of his own and his fellow workers' future. Competitive conditions of tomorrow call for intelligent and united effort today."

gested men for the school whom they believe are adaptable to line work.

Groundmen are encouraged to don linemen's equipment during their lunch hour and take a try at climbing to see if they are adapted to it, and whether they like it. Every effort is made to let the men themselves indicate their preference for division and type of work.

There is nothing obligatory about going to the school, but not a man has turned down the chance to go. Of the men who have attended the lineman's school, only a few have failed—that was because they just could not climb. They lacked the ability to work at heights.

Previously the company has conducted schools from time to time, but it has not been a continuous process. No schools were held just before the war or during the war, but the specialist schools which it is utilizing today are doing the job of training the additional men who are needed to string the 9,000 miles of distribution lines the company will build in the next 2½ years. It will supply the men who can accurately estimate their cost.

As one of the functions of the company's employees association—known as the Pacific Service Employees Association, an educational program has been developed through the years. Its purpose is to bring general educational courses to any employees who want them, and is on a purely voluntary basis. Some 88 courses are given. Here too, a majority of the books are written by the employees themselves.

Courses are grouped under business, electrical, gas and mathematics curricula, but other courses such as public speaking, dramatics, first aid, mechanical drawing, painting, photography, science, sales, traffic and safety are available. Employees can suggest additional courses they would like to take.

Some of the classes are organized and conducted by the employees themselves, with employees as instructors; others, such as business law, are taught through cooperation with local schools, and still others may be taken through university extension courses, or even by correspondence.

The association also sponsors outside speakers and films of both entertaining and educational types, and is responsible for the recreational activities of the employees. Its educational work has been a help to the company in its specialist schools, because a ready supply of text books and materials which had been developed over a period of time was immediately available and at fingertip. It could now be put to use in intensified training.

As a result, the company has been able to put its program into immediate effect. It has been a help in developing trained specialists when they were needed.

 An instructor shows two student linemen the proper method of adjusting a Nicopress line splicing tool. Students become familiar with the equipment they will use.





• Someday the "small fry" grows up. Western firms are reeling in an ever-increasing share of the nation's business each year. In order to compete successfully with the East and consolidate their gains, Western concerns must cut all sales costs to the bone.

# How Western Firms Can Increase Their Sales Profits

ESTERN manufacturers who have only recently emerged as big-time producers are now faced with their major postwar problem, the matter of developing profitable sales volume for their companies, and controlling distribution costs for greater profits.

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There is no reason for a cost unless it contributes to a profit. Yet too often the subtle relationship between distribution costs and profits is ignored, and the greater profits that distribution cost control would make possible are allowed to drain off.

To cut distribution costs the basic problem is to determine which jobs should be brought under a system of cost control. In order to do this the distribution expense budget should be broken down into functions — such as sales administration, sales, advertising, sales promotion, warehousing and delivery, credit and collections — and into units, such as products or classes of products, customers or markets, sales territories or districts, sales regions or divisions. An overall distribution cost taken by itself is of little value for control purposes because it is usually an average and does not show strikingly high and low costs. Only when an analysis of

Because so much industry in the West is young in years and experience, it often lacks knowledge of market evaluation and how to set up a selling organization. To help our readers, we therefore present the experience of an expert, J. S. Jones, manager of sales analysis for Ralston-Purina Company. His interests are national; he tells how to analyze sales potentials objectively,

the budget shows how much each operation costs can you find those out of line.

Analysis of operation and standardization of methods go hand in hand with cost controls. The analytic study of time and movement is as profitably applicable to selling as it is to production.

Re-routing of sales calls frequently doubles the volume per man hour. When a man makes 1,000 calls a year and travels 35 miles between calls, he can't sell as much as when he travels 10 miles between calls and makes 2,000 calls a year. Calling on small buyers reduces the volume per call and per sales hour.

Determining the number of calls, and the interval between them which produces the most profitable volume, is an important part of the job of sales management. Any possible reduction in traveling or waiting time makes available more productive sales time. Locating the salesman's headquarters near the work center of his territory enables him to spend more time selling and less time traveling.

Sales managers who coach and drill salesmen on time use will be rewarded. Ways and means will be found for making sales time more productive or sales costs will not continue their downward trend. Nor will salesmen's incomes continue their upward trend unless this is done.

After determining the jobs to which distribution cost controls should be applied, each function and unit in the budget of the individual business should be examined in order to find opportunities for income, expense and profit control. Segments that add more to cost than they do to revenue can thus be located and adjustments made. Averages can be misleading. You must isolate to get a complete picture.

Market analysis goes hand in hand with cost controls. Until market potentials are known, you do not know how much you can afford to spend or how much distribution pressure is necessary. When you know how much distribution pressure you have put on, how much business resulted, what income the business produced and what the cost of the business was, you can figure your profit and loss, and compare it to your budget.

#### **Budget For Each Market**

It is possible to set volume objectives and budget the distribution expense for each segment of the market, as many do for the different functions of the business. Then you can check your work reported, expenses incurred, volume obtained and profit made compared to the plan. This

may be done annually, quarterly, or monthly as needed, by units as well as functions.

After deciding how much business is necessary to attain a profit, the next questions are: (1) How much of the available business can be profitably obtained? (2) What is the maximum profit obtainable? (3) What is the profit vanishing point—where total costs exceed total income?

Suppose it takes a volume of \$120,000 to carry expenses; a loss is sustained until sales reach that point. The maximum annual profit is obtained on sales of \$360,000, and less and less money is made if additional volume is obtained by going farther afield to gather it in; by higher labor rates for overtime and by added advertising and sales expense.

Obviously, sales should be halted at \$360,000 unless additional profit can be obtained by adjustments such as oper-

### Example of Sales Work Plan and Performance

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#### SALES WORK PERFORMANCE

		Units Sold	No. Cali Reporte
Market	#1	18,460	168
11	<del></del>	4,351	50
11	#3	700	16
77	#4	1,991	39

ating another labor shift, taking in an additional profitable sales area, adding other profitable items to the line or supplying additional service at profit.

A publication mail order business advertised for inquiries and got a prospect list which they covered with a standard series of 17 direct mail follow-ups. After the business had operated many years without making much profit, a consultant was employed. He determined that the first five mailings paid expenses, the next five mailings made a net profit of \$25,000 and the last seven mailings lost that \$25,000. The market had simply been worked past the profit point, which the company should have been able to determine from a cost control system.

Distribution executives need to develop facility in the managerial use of economics, accounting, statistics, research and analysis. They need to learn what facts to get, how to get them and then above all, they need to follow the facts to larger profits.

Profits, to a considerable degree, are dependent upon management's astuteness

in buying effective distribution effort. The total distribution expense must be economic, i.e., the amount that will contribute most to total net profit. It should not be based on custom in the industry or what competitors are doing.

Part of a sales manager's compensation should be based on his profit showing. The salesman's minimum salary above expenses is set by the minimum living requirements of the type of salesman needed. But, part of his compensation should be geared to his contribution to profits. What ambitious, aggressive salesman will intensify his efforts for the company if his compensation bears no relationship to his volume and profit contribution?

#### Ways to Better Sales Efforts

Inflexible salary schedules dull individual sales effort. Flexible salary schedules and rising scales of bonus contribute to larger incomes for salesmen, better executive salaries, larger profits, a higher standard of living and the general welfare. Before wealth can be distributed, it must be cleated. For big consumption per worker, we must have big production per worker.

Executives generally are becoming conscious that the problem is not to spend less or spend more, but how much to spend for the best profit. Fundamentally, the distribution cost must be governed by a budget of functions and by recognized standard costs of units, based on a forecast of sales for the budget period and a knowledge of potentials by markets. The necessities of the economic situation will intensify this movement.

Cost control does not mean pennypinching, or niggardly stinginess. It in-

volves spending enough money to get the job done, but not an excessive amount. There is a difference in the amount needed in different areas. In one "established" area, the cost per unit over a period of 16 years studied, declined from 31c to 22c while in a "pioneer" area over the same 16 years, the cost per unit declined from 73c to 22c.

A product with a total overhead income of 35c but costs 75c a unit to sell will lose money no matter how many units are sold. In some businesses it costs almost as much to go get a small order as it does to get a large one. The packers recognized this when they started serving the smaller buyers by cash off the truck on special routes instead of on the sales call, credit and delivery plan. They devised a special distribution plan, tailored to get the smaller orders and serve that trade without

#### To Know Your Sales Costs, Determine These Factors

- 1. Profitable size of order.
- 2. Profitable trading area.
- 3. Economic lot purchase,
- 4. Cost per response for each advertising unit.
- 5. Cost per order taken by salesman.
- 6. Clerical cost per order, per customer per unit of correspondence, per account collected.
- Selling cost per square foot of retail space allowed each department, per square foot of counter space in the front of the store compared to similar space on each side or at the back.
- 8. Variations in sales cost of different individuals, different departments, different seasons of the year, different days of the week, different hours of the day and different days of the month.

## **How to Tell Where Leaks** In Sales Costs Hide

Variation in Cost Per Unit by Classes of Markets in the Same Sales Region:

"C"	COST	9 TI	MES	AS	MUCH A	S "AA,"	LARG	ELY BE	CAUS	E OF	"AA	'S" V	OLUME
AA	markets	cost	per	unit		096	AA	markets	took		units	each	annually
A	69	97	89	89	4400	107	A	"	11	1160	**	10	11
C	87	30	207	60		802	C	**	89	450		7.5	11

LOSSES IN CLASS C MARKETS ATE UP SOME PROFITS MADE IN OTHER MARKETS

Market Class	Units	Income Per Unit	Expense Per Unit	Profit Per Unit	or Loss Per Market
AA	2,600	.337	.096	.241	\$626.60
A	1,160	.381	.167	.214	248.24
В	450	.387	.253	.134	60.30
C	63	.404	.802	398	25.07

losing money. The reverse of this case and delivery service to its already highoccurred when a food distributor, in order cost service, and increased its losses on this to glean small orders on narrow margin type of business. It is poor business to products, added special warehouse, credit seek orders on which there is no profit.

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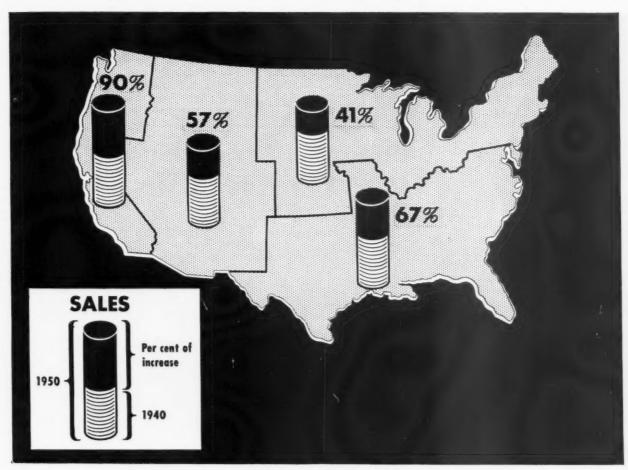
Selective distribution is finding out how much business is available, and where, and then going after it on a controlled distribution cost basis. It will become more widely used as cases like the following multiply:

1. A household refrigerator organization was doing one-half the business of a major competitor, though it had four times the number of distributing points its competitor had. So they built strong selling organizations in major markets; dropped half their former markets; and concentrated 96 per cent of their production in one refrigerator. Profits went up for both dealers and manufacturers.

2. A company with 10,000 active markets used 1,000 salesmen. They found that 30 per cent of the salesmen were selling 70 per cent of the volume. By sending more salesmen to the markets showing highest potentials, they found that 30 per cent of their salesmen now sold twice the earlier volume in just half the territory, or 5,000 markets. Concentration of effort in a smaller territory cut costs, and doubled salesmen's incomes.

3. A tank truck delivery cost study helped Standard Oil to cut marketing costs in half. The average size of motor fuel delivery by tank

# **Buying Power Shifting Westward**



 The above chart shows the extent to which retail sales will have increased in each area of the Nation by 1950. The Pacific States will have increased sales 90 per cent. Chart coordinates retail sales estimates with Bureau of Labor estimates of labor force. truck doubled. The number of bulk plants serving the trade was reduced 42 per cent although the total volume handled was doubled. Average tank truck capacity increased 57 per cent. Base salaries of tank truck salesmen increased 50 per cent.

4. A wholesale grocer analyzed his sales and found that 60 per cent of his customers purchased unprofitable amounts, while the other 40 per cent took 80 per cent of his sales and netted a nice profit. He found his profitable customers to be those who purchased individual orders of at least \$40.

Customer "A" bought \$9,965 worth of goods, but 213 of his 295 orders were unprofitable, and the 82 profitable orders were not big enough to offset the unprofitable orders.

Customer "B" bought \$4,538 worth of goods, but only two of his 16 orders were unprofitable. While "A" bought more merchandise than "B," his business was handled at a loss.

The wholesaler did not follow through in this case. He justified the retention of the old system on the basis that the prestige of the company and good will of the trade would be seriously endangered by eliminating the unprofitable customers, and that these unprofitable customers would grow into profitable accounts.

#### Realigning Territories

Companies that have never figured profit and loss by sales territories may be overlooking potential profits. Such an analysis frequently reveals the need for territory realignments, Factors which would determine such a need and point the way to realignment are shown below:

- 1. Existing sales volume.
- 2. Potential sales volume.
- 3. Available sales budget.
- 4. Budgeted profit.
- 5. Salesmen's duties in detail.
- Number of contacts needed to get the sales job done.
- 7. Average time needed per contact.
- 8. Distance between contacts.
- 9. Transportation facilities.
- 10. Timing between contacts.
- 11. "Sales expense" standards.
- 12. "Contact frequency" standards.

A thorough time study of salesmen's performance should precede territory realignment. Control of a sales program consists of seeing that each man understands what he is to do, how he is to do it and when he is to do it; and of recording effectiveness, time, and cost of performance. Reports to the salesman of his progress and performance rating are a necessary incentive for satisfactory completion of the program.

Control is achieved by setting up, operating and maintaining territory units that are in line with proved standards of the business. The experience of each business must be analyzed, and its standards must be based on the results. Distribution control consists of directing effort, measuring results and governing future action. Analysis of control records indicates when and where corrective action is needed. Then routines are set up so as to insure uniform-

ity of procedure and results. Management control is maintained by reports which measure the progress toward the predetermined goals.

#### Watch Your Costs

Cost per unit is a measure of distribution efficiency. Volume and cost may both be going up. Volume may be going up with cost going down. Volume may be going down with cost going up. Volume may be going down with cost going down too. It is important to know what the cost should be.

Many operating executives who have little capacity for locating leaks or opportunities for improvement, have a great capacity for changing situations once they see the need. Distribution opportunities are constantly shifting and this calls for shifts in distribution activities.

Too little has been done by most firms to measure the effectiveness of advertising and sales promotion expenses. There should be a best amount to spend to make the most money, and every business should try to determine that amount.

Just as it is possible to figure the number of men necessary to get a sales job done, so is it possible to work out the size of the advertising and sales promotion job and a profitable expense budget for it. But there is no rule of thumb. The right amount varies with each job to be done.

Here is the record on one product:

Average	Exp	en	ise	Res	ults per Year
\$ 73,000	for	4	year	rs	\$21,000 loss
245,000	37	3	"	*****************	90,000 profit
375,000	"	5	11	**************	30,000 "
435,000	11	3	**	**************	17,000 loss

Here an expense of \$150,000 to \$400,000 a year made a profit. Under \$100,000 and over \$400,000 a year brought a loss. The profitable advertising appropriation range for this situation seems to have been from \$150,000 to \$300,000 a year. Within this range the type of advertising and sales promotion work done, probably had considerable effect. It is not impossible that some types are twice as effective per dollar spent as are others.

#### Influence of Outside Factors

Sometimes the size of payrolls, the price of milk and eggs, the corn-hog-cattle ratios, the fruit crop prospects or other economic factors, may have more effect on volume than the dollars spent for distribution activities. The director of distribution, in order to be in control, must see the full picture. He must know and control the interrelationships of opportunity, effort, results, income, expense and profit.

In 1929, in a certain market where sales of 25,000 units cost \$18,000 and showed a loss, adjustments based on analyzed experience enabled management to produce sales of 25,000 units for \$6,000 and show a substantial profit in 1941.

More pressure and larger expense budgets do not always solve distribution problems. The profit on highly competitive items, sold on a price basis, may not allow any advertising expense. On the other hand, there may be "sleepers" with high margins and large volume opportunities that call for liberal expense budgets. Only alert management will recognize opportunities and direct distribution efforts to cash in on them,

# Railroads Are Turning To Diesel Power in The West

Complete dieselization of the Union Pacific Railroad south of Salt Lake City, Utah, will be accomplished when the railroad receives delivery in the fall of 7 diesel-electric passenger, 28 freight and 29 switching locomotives which have just been ordered. Cost of the equipment is put at \$22,000,000.

With delivery of the new equipment, the Union Pacific will have 178 single diesel units for freight and passenger traffic, consisting of 66 single diesel units for passenger use, 112 single diesel units for freight use, and a total of 141 diesel switch engines.

In addition, the company now operates 600 oil-burning steam locomotives of all

Southern Pacific Railroad has purchased 23 new 1000 hp diesel-electric switch locomotives for use in railroad yard operations. Deliveries of the new switch engines will be made during the first three months of the year.

With the new equipment, Southern Pacific will have 153 diesel-electric switch locomotives in operation.

The Santa Fe Railroad has the largest diesel-electric fleet of locomotives in operation in the West. With delivery of new locomotives during 1946 the company now has 388 diesel units in operation. Of these 90 are passenger locomotives, 276 are freight locomotives, and 22 are switch engines.

The Western Pacific lags with only 12 diesel-electric freight locomotives now in operation. They run between Oroville, Calif., and Salt Lake City, Utah, and on the branch line between Keddie and Bieber, Calif. Company also operates 24 diesel switch locomotives.

While the company has no diesel passenger locomotives now, it has three on order which will be used for operation on the California Zephyr daily streamline service to Chicago which will begin when they are received.

# Building Reefer Cars of New Materials



Do You Have a Plant Problem in Insulation, Welding. Strength or Durability? New Materials Chosen for Reefer Cars May Have Answer for You.

POUR Western railroads confronted with the problem of transporting perishable crops safe from Western farms to markets all over America, have come up with some new ideas on how to utilize new materials to do the job better.

The Santa Fe approaches the solution with a stainless steel refrigerator car built for it by Consolidated Steel Corporation, Los Angeles. Pacific Fruit Express, owned and operated jointly by Union Pacific and Southern Pacific, is experimenting with an aluminum-alloy light-weight car manufactured in the company's own shops in Los Angeles. Northern Pacific has turned to a super-insulated steel car, especially designed for transporting frozen foods, to do the job. These cars are being constructed at the East Rochester, New York,

shops of the Merchants Despatch Transportation Company.

Weight of the new cars varies from P.F.E.'s light-weight aluminum car which weighs only 47,400 pounds (and effects a saving of about 9,500 pounds) to 57,200 pounds for Santa Fe's stainless steel model, and 80,700 pounds for Northern Pacific's heavily insulated car.

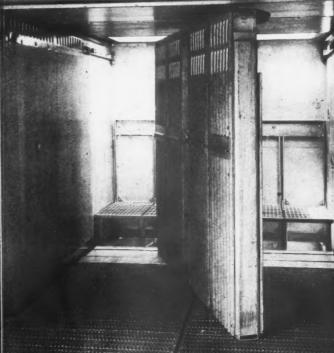
Both Santa Fe's and P.F.E.'s experimental cars embody not only the advanced ideas of the railroads' car designers, but also virtually every suggestion made by the refrigerator car committee of the United Fruit and Vegetable Association. In addition, they meet standards of the Association of American Railroads and the Interstate Commerce Commission.

The Santa Fe stainless steel car is sheathed with stainless steel, cold rolled. It is readily weldable and permits making a complete seal, is resistant to corrosion, is hard and strong and resists denting. It retains its luster and requires no painting. Its head conduction is half that of mild steel of the same thickness. Since flat sheets of steel are affected by changes in temperature, Consolidated pressed horizontal ribs into the sheets. This permitted welding to the side frames relatively thin sheets, on all four edges, by the Union Melt process without material distortion. Welding was done at the rate of about 60 in. a minute, with stainless weld rod.

P.F.E. has not started its aluminum car on test runs as yet. It is being exhibited on the lines of the Southern Pacific, Union

• K. V. Plummer, left, vice-president and general manager of Pacific Fruit Express Company, demonstrates convertible ice bunker in experimental aluminum car to W. T. Price, Union Pacific traffic manager, and G. J. Blech, Southern Pacific freight traffic manager. At right can be seen the Preco bulkhead in the Santa Fe's stainless steel refrigerator car, as it is pulled out and rotated. Similar to the ice bunker at left, it shows how simple an operation loading of ice into the cars will be in both of the experimental models.





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Pacific and Western Pacific in the 14 states served by Pacific Fruit Express. When it has been viewed in all territories it will be placed under severe road tests to measure its efficiency and wearing qualities under all conditions.

The Santa Fe experimental car has already made three Coast-to-Coast trips, but engineering data is not available yet with regard to its efficiency.

The aluminum-alloy car which is undergoing tests by P.F.E. is an experimental model. For standard use the company has ordered 5,000 new cars of light-weight construction (weighing about 53,500 lbs.) and built of high tensile steel.

These orders are divided among Pacific Car & Foundry Co., Renton, Wash., the Pullman Car Co., General American Car Co., American Car & Foundry Co., all of Chicago, and the Mt. Vernon Car Construction Co., Mt. Vernon, Mo., with each concern building 1,000 of the cars. In addition, 1,500 cars are being built in the Los Angeles shops which are of wood

sheath—rather than the steel specified for the 5,000 cars.

Great Northern Railway has some 250 refrigerator cars also on order from Pacific Car & Foundry Co.

#### How Valuable Are New Materials?

For the most part the railroads have chosen standard refrigerator cars to do their hauling job, except for the experimental models which are being used to determine the value of new materials for bodies—aluminum (P.F.E.) as against stainless steel (Santa Fe)—as well as other new materials.

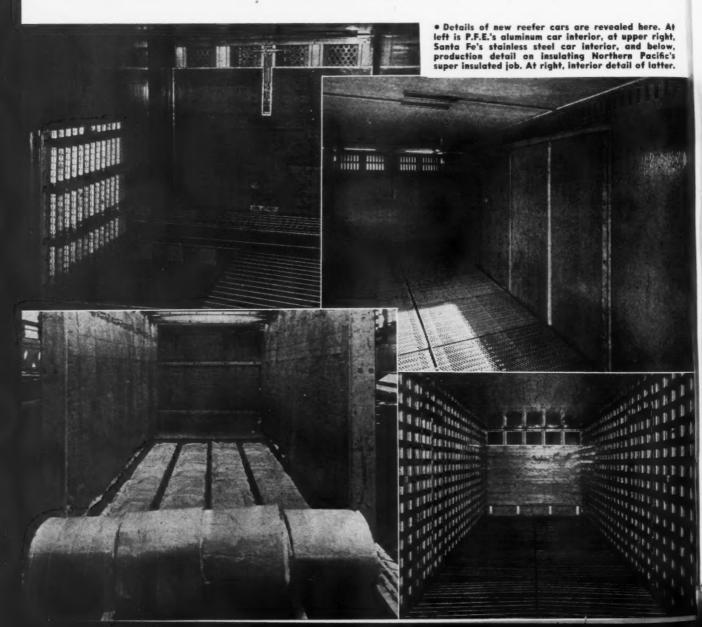
The Santa Fe car which was turned out by Consolidated Steel incorporates a new easily-sliding door, an innovation to refrigerator cars, which are traditionally hard to open because of the friction of the packing around the doors.

When Santa Fe went to Consolidated's engineers with the problem of building an experimental stainless steel car they asked whether a door couldn't be built which could easily be opened. The engi-

neers agreed to tackle the problem and after two years of research and development came up with a unique sliding door which works.

The door, which has a six-foot opening, is placed in position for rolling on a track by means of a single bar handle moved left to right through a half circle. Door panels act as a large toggle for easier manual operation and positive seal, and are self-locking when toggle is over center. Opening and closing of the door requires less manual effort than for smaller swinging doors.

After seal and padlock are removed (La Flare type of spring, wood and canvas seals are used), an operating bar near the center is lifted from the lock and rotated horizontally 180° from left to right. The first half of this motion operates the toggle; that is, the two door panels at the hidden central vertical hinge move outward, drawing the door away from the side jambs. The second half of the operating bar rotation moves the right edge of the right-hand panel outward so that the



panel is parallel to but clear of the side of the car. The operating bar is dropped into a slot and held in that rotated position and the door is ready to slide.

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The operator then takes hold of grab iron at left of the door and slides the door to the right. The grab iron has a small freedom to move which operates the latch, and through leverage against a striker plate gives an easy means of starting the sliding motion of the door. The left-hand panel automatically tracks until it too becomes and remains parallel to the side of the car. When the door strikes the buffers the latch automatically locks the door open until it is manually closed in the reverse operation.

A standard six-foot door size, as found in the standard box car, is used rather than the four to five-foot opening with which most refrigerator cars are equipped. Despite this larger size, when the door is closed, no part of the fixture or track extends out as far as existing fixtures on swinging doors, and when open, no part extends out from the side of the car as far as swinging doors for smaller openings, even when they are hooked to the car side. The car need not be moved from the loading platform for either opening or closing it, as is necessary with the old-type door.

Patents are pending on the new-type

Both P.F.E. and Santa Fe cars use water ice. The companies consider mechanical refrigeration as still in the experimental stage. Besides, the units constitute added weight when hauling empty or when in use as a general-purpose car, and they require servicing at proper intervals. If the units are removable, the means must be provided for removal and storage.

The great majority of the loads require moist atmosphere within a temperature range of 35-40° which water ice provides. It acts as its own thermostat and without salt cannot itself drop to a freezing temperature which would damage the lading. Cars of both companies are iced en route and they find it the most economical method of refrigeration. P.F.E. owns 19 ice plants that can manufacture 5,110 tons of ice daily to service the cars. Santa Fe for its part used more than 1,000,000 tons of ice during 1946, 750,000 tons of which were used on the Coast Lines alone.

Both companies use forced air circulation. Preco fans force air under the "herringbone" floor racks and through the wall flues to surround the loads and provide for more uniform cooling or heating. Louvers which can be opened or closed quickly convert the car from an ice-cooler refrigerator to a perfectly sealed container for frozen foods. Collapsible bulkheads increase the interior dimensions approximately six feet for non-perishable shipments,

The fans are driven from the car wheels but, for precooling with the ice bunkers filled, electric motors can be slipped on mounting brackets to provide air circulation in a stationary car equal to the circulation at 50 miles an hour. The fans permit elimination of the conventional ice basket.

While the Santa Fe refrigerator car uses floor racks of steel, P.F.E. uses a plywood rack. The experimental P.F.E. car uses an aluminum rack. Both companies apply a waterproof asphalt base to the wood floor of the car as a seal against moisture, and then the herringbone racks are placed on top of that.

The P.F.E. car has improved the ride of its cars by the use of a long-travel spring. It travels 3 13/16". The resulting easy ride is known in the trade as a "babybuggy ride."

Northern Pacific's heavily insulated refrigerator cars, which are specifically designed for transporting frozen foods, utilize both asphalt and cork composition over the interior surfaces of the steel sides and framing to guard against condensation. Where Northern Pacific uses sidewall racks for lining the walls of the interior of the cars, both P.F.E. and Santa Fe use plywood walls.

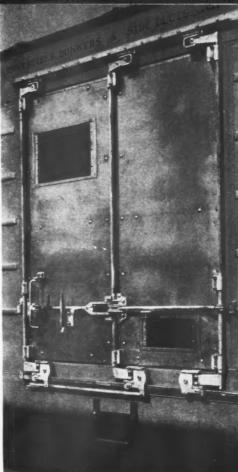
Insulation for cars of Northern Pacific, P.F.E. and Santa Fe is of glass wool. P.F.E. uses  $4\frac{1}{2}$ " of insulation in the floors and 4" of insulation in the walls. The Santa Fe experimental car has Fiberglas five inches thick at the sides of the ice bunkers and  $3\frac{1}{2}$ " elsewhere with the exception of the floor, where four inches of Hairinsul, over and above the asphalt and wooden floor are applied.

With the exception of its super-insulation, Northern Pacific's reefer car is practically identical with the P.F.E. car, and its 250 standard cars now on order from Pacific Car & Foundry will be exact duplicates of P.F.E.'s 5,000 new cars.

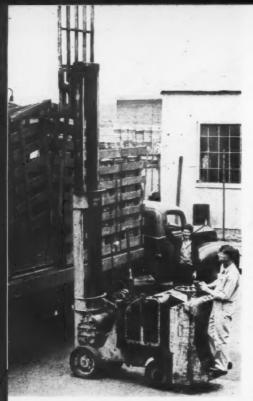
The new cars reveal that the railroads are not asleep to the use of new materials and methods which may make their reefer cars better. When engineering data is available, the companies will have an accurate gauge as to what advantages the materials offer.

In addition to what the Western railroads themselves are doing to investigate new materials, the Refrigerator Car Research Bureau of the Association of American Railroads has recently completed tests on six refrigerator cars of new design, each loaded with frozen foods, which moved from Hillsboro, Oregon (just west of Portland to the uninitiated) to Cincinnati, Ohio. Cooperating in the tests were the U. S. Department of Agriculture and the National Bureau of Standards.

This is the new door designed by Consolidated Steel for the Santa Fe car. At top door is in closed position, while at bottom sliding door is in toggle position with handle rotated 90 degrees. Door slides easily.







• Above: Replacing stakes in the truck.

# Trailer-Pallet Plan Doubles Output California

ACED with the problem of assembling a finished product from two different materials manufactured in separate plants several miles apart, a southern California manufacturer has worked out an ingenious coordination of motor trucks and trailers with lift trucks that has increased shipments of the finished products from two a day to five. At the same time a great reduction of the inventory of raw materials has been accomplished.

The system begins with the loading of one raw material at Factory A for trans-

porting about 10 miles to Factory B. The material is loaded on pallets, picked up on the forks of a lift truck and deposited on the near side of a semi-trailer from which the stakes on one side and the rear end have been removed. The bed of the semi-trailer is of smooth metal, consequently the first pallet slides easily over to the far side of the bed when the second pallet follows.

After all the pallets are in place, a push by the lift truck from the rear closes up any longitudinal space between pallets in

The palletized load below is lifted to truck bed on forks of a lift truck and deposited
on near side of semi-trailer from which stakes on one side and rear end have been removed,
Bed is smooth metal so pallet slides easily to far side of bed when second pallet follows,



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order to make the load ride more closely. Then the lift truck picks up the stakes, which are four to a side and of extra height to provide greater loading capacity, and lowers them into position for replacing.

#### Lift Trucks Used

At the other end of the haul the stakes are removed by a lift truck, which then unloads the pallets, using an extension on the forks to reach the pallets on the far side of the semi-trailers. Next the pallets are trucked to the elevator, which lifts them to the second floor of Plant B for further processing of this material. When this is completed, a gravity distributing system sends this sub-assembly back down to the first floor, at the end of the conveyors where the other material has been treated.

Now everything is ready for final assembly, and the inspector at the end of the line, who assembles the units into loaded cartons for delivery to customers, is the last man to handle even the cartons individually. He builds up a pallet load which is taken away by lift truck, either to be loaded on a semi-trailer or truck for direct shipment to a customer, put into a box car for rail movement to distant points, or else trucked into the warehouse for storage.

#### Shuttle System

Movement between the two factories is on a shuttle basis, one tractor serving three semi-trailers, one of which is at each end of the line for loading or unloading while the third is en route. This continuous flow frees the dock at either end from congestion.

Palletized semi-trailer loads can be unloaded in 15 to 20 minutes, which is less time than it takes the driver to make the trip from one plant to another. Two sizes of semi-trailers are used, 33 feet and 28 feet in length, the smaller size being necessary because in some cases the raw material is too heavy for the big semi. Flexibility in delivery to customers according to size of order is also permitted as the result of having not only two sizes of semis but also individual motor trucks.

Although Plant B runs 24 hours a day, it is not necessary to provide night service from Plant A, because the latter can keep

Wherever materials are to be handled, there some business organization is either making or losing money, perhaps an amount large enough to mean the difference between profit or loss on the entire operations of the company. For that reason, "Western Industry" provides a continuous editorial service to its readers on materials handling developments and problems. The accompanying article is another of "Western Industry's" regular features on the subject of materials handling.

ahead of Plant B without difficulty. Material received from Plant A in the daytime goes directly to the door of Plant B. A second trailer shift late in the day brings enough material into the warehouse of Plant B to last through the night and into the next morning. The warehouse is at street level and the trailers are unloaded inside

Night-shift "mule" drivers transport the material from the warehouse to the processing line in Plant B during the night as needed. The system eliminates the need for any warehouse force except for the lift truck operators, and no hand labor is required in the loading and unloading of motor trucks or trailers other than the maneuvers of the man riding the lift truck. Rear end control of these lift trucks gives mobility and easier operation, as well as better control of the load.

As there is no warehouseman, spotting of loads in the warehouse is controlled by the night foreman of Plant B, who makes out a tag for each pallet, describing the contents of the load and specifying its storage position. The truck operator signs the stub of the tag and returns it to the foreman after completing the movement. Outgoing shipments are controlled by the shipping office, the stock clerks giving the instructions to the truck operator.

#### High Piling on Own Pallets

Warehouse piling is 18 to 20 feet high. The company make their own pallets, which have a lighter stringer than the standard pallet, because they are used only with automatic equipment.

In customer delivery service, outstanding savings in time have resulted. Routes are set up so as to save time, and a shuttle service with tractors and semi-trailers is utilized wherever possible. Further advantage has been gained by persuading customers and suppliers to use interchangable pallets wherever possible.

For nearby customers, a load can be made up, delivered, and the equipment

brought back to Plant B in an hour's time. As an example of spedy hauling, a Western Industry staff representative witnessed a lift truck operator loading by himself eight pallets, totaling 1,120 cases, on a small motor truck in less than 10 minutes without dismounting from his machine.

The only hand labor involved in this 10-minute operation was that the motor truck driver had to lash his load with rope, the stake sides not being used on this short haul to the customer's receiving platform. This motor truck was able to make nine trips a day from warehouse to destination.

Customers not having interchangable pallets send over their own flats and the company loads them up for delivery. The system that this company has worked out is an encouragement to customers to use lift trucks for unloading, and even to make their own loading docks the same height as the trailer bed, because they can thus speed up their own plant operations.

## Saving Time in Unloading Trucks and Trailers

Several ideas on speeding up the unloading of trucks and trailers are being tried out in trucking circles in the West. To overcome the handicap of rear-end unloading, one operator is experimenting with the use of rollers and roller conveyor for cartons, and has even gone so far as assemble the load in boxes which can be rolled out on the dock and unloaded there.

Another operator is working on the idea of gravity chutes from the back and sides, and still another believes that the dump truck method of tipping the load can be applied to other types of cargo.

#### Effects of Temperature On Aircraft Engines

Hazards created by changes in the atmosphere seriously may affect the operation of turbine- and jet-propelled aircraft, A. Dolinsky and F. W. Disch of Boeing Aircraft Co., Seattle, have reported to the Society of Automotive Engineers.

They propose that, with turbines and jets developing so rapidly, it would be wise to take time out to learn, through hours of operation in the air, just how extremes of temperature, moisture, and humidity, and how dust, sand, and ice, will influence operating efficiency.

Effects of atmospheric temperature variations on engine performance can be much more severe with turbine and jet power-plants than with reciprocating engines, it was explained. Attempts to filter destructive particles from the air have been less than completely successful.

Abrasive, erosive, and contaminating matter entering an engine's airstream, they point out, can reduce design efficiency, thrust, and power by embarrassing percentages. Anti-icing provisions were said to be mandatory with the new-type engines.

# For "Ready Reference" Here's **Western Metals Congress Program**

ETAL industry know-how is the order for the day at the Western Metals Congress which convenes March 22-27 in Oakland, Calif. The more than 55,00 metal scientists, engineers and industrial executives in attendance will hear the latest developments in the metals industries. Included will be progress made in metal alloys, metals manufacturing and fabricating, and how best to weld different metals.

Three separate programs are provided for members of the American Society for Metals, the American Welding Society, and the American Foundrymen's Associ-

Speakers for the technical program of the Congress are:

Monday morning:
"Principles of Heat Treatment of Steels,"
Lecture No. 1; E. E. Thum, Editor, Metal Progress, Cleveland, Ohio.

"Electron Microscopy"; David Harker, Res. Lab., General Electric Co., Schenectady, N. Y. "Tool Steels—Specific Discussion"; Norman

Stetz, Pres., Braeburn (Pa.) Alloy Steel Corp. "Interpretation of Creep and Stress Rupture Data," Lecture No. 1; Francis B. Foley, Supt. of Research, Midvale Co., Nicetown, Pa.
"Physical Chemistry of Steelmaking," Lecture No. 1; John Chipman, Prof. of Met.,

Mass. Institute of Technology, Cambridge, Mass.

Monday afternoon:

"Physical Metallurgy of Stainless Steels,"
Lecture No. 1; V. N. Krivobok, Dev. & Res.
Div. International Nickel Co., New York City.

"Effect of Residual Stresses on the Fatigue Strength of Metals," Lecture No. 1; John O. Almen, Head Mech. Eng. Dept., General Motors Co., Detroit, Mich.

"Physical Metallurgy of Aluminum Alloys," Lecture No. 1; E. H. Dix Jr., Asst. Dir. of Res., Aluminum Co. of America, New Kensington, Pennsylvania.

"Theory of Corrosion," R. M. Burns, Chem. Dir., Bell Telephone Labs, Murray Hill, N. J. "Industrial Growth of the West"; F. T.

Letchfield, Cons. Engr. & Asst. Vice Pres., Wells Fargo Bank & Union Trust Co., San

Monday night, 8:00 to 8:55— Golden Gate Lecture: "Correlation of Re-cent Data on Hardenability"; A. L. Boegehold, Pres., American Society for Metals, and Head Met. Dept., Res. Labs. Div., General Motors Corp., Detroit.

Tuesday morning:
"Principles of Heat Treatment of Steels,"

Lecture No. 2.

"Fabrication of the Brasses"; Harry P. Croft, Dir., Technical Control and Res., Midwestern Div., Chase Brass & Copper Co., Cleveland, O. Tool Steels"-General Discussion; W. H. Wills, Tool Steel Met., Allegheny-Ludlum Steel Corp., Dunkirk. N. Y. "Interpretation of Creep and Stress Rupture

Lecture No. 2.

11:00 to 11:55 a.m.—"Physical Chemistry of Steelmaking," Lecture No. 2.

Tuesday afternoon:

"Physical Metallurgy of Stainless Steels," Lecture No. 2.

"Effect of Residual Stresses on the Fatigue Strength of Metals," Lecture No. 2.

Physical Metallurgy of Aluminum Atloys,"

Preparation of Surfaces for Protective Coat-

"Preparation of Surfaces for Protective Coating"; James R. Ewing, Dir. of Sales, Solventol Chemical Prod. Co., Detroit, Mich.
"Nondestructive Testing by Means of the Supersonic Reflectoscope"; Floyd Firestone, Consulting Physicist, Washington, D. C.
"New Approaches in Heat Treatment"; Glen

Riegel. Ch. Met., Caterpillar Tractor Co., Peoria, Ill.

Wednesday morning:

Wednesday morning:
"Hardenability of Steels"; W. E. Jominy,
Staff Engineer, Chrysler Corp., Detroit.
"Tool Materials and Their Application";
A. H. d'Arcambal, Vice Pres., Consulting Met.,
Pratt & Whitney, West Hardford, Conn.
"Alloys for Ultra High Temperature Service"; F. S. Badger, Vice Pres., Haynes-Stellite
Co. Kolomo Ind.

Co., Kokomo, Ind.
"Controlled Atmospheres"; H. M. Heyn, Manager, Heat Treat Div., Surface Combustion Co.. Toledo, Ohio.
"Steel Melting Practice"; C. H. Herty Jr.,

assist. to Vice Pres., Bethlehem Steel Co., Bethlehem, Pa.

Wednesday afternoon:

"High Chromium Irons"; D. H. Newell, Ch. Met., Babcock & Wilcox Tube Co., Beaver

"A Mechanism for Plastic Flow"; J. H. Holloman, Research Lab., General Electric Co., Schenectady, N. Y.
"Physical Metallurgy of Aluminum Alloys,"

Lecture No. 3.

'Protective Coatings"; Burns, Bell Tele-

phone Labs.
"X-Ray Diffraction"; Kent R. Van Horn,
manager, Cleveland Res. Div., ALCOA, Cleve-

Thursday morning:

"Research in Carbon Steels"; Harold K. Work, Manager of Res. and Dev., Jones &

McLaughlin Steel Corp., Pittsburgh.
"The Heat Treatment & Properties of Precision Cutting Tools"; d'Arcambal.
"Alloys for Low Temperature Service"; S.

Hoyt. Battelle Memorial Institute, Colum-

Thursday afternoon:

"Stainless Steels in Aircraft"; Given Brewer, Consulting Met., Laguna Beach, Calif.

'A Mechanism of Fracture'; Holloman.
'Recent Developments in Magnesium Alse'; J. C. McDonald, Asst. Tech. Dir., Magnesium Div., Dow Chemical Co., Midland.

"Recent Advances in Powder Metallurgy"; Earl R. Parker. Assoc. Prof. of Phys. Met., University of California, Berkeley, California. "Mechanical Testing"; Arthur B. Focke,

Res. Met., Diamond Chain & Mfg. Co., Indian-

"Electron Microscope"; Charles Banca, Dir., Microscope Div., Radio Corp. of America.

Speakers for the meetings of American Foundrymen's Association are:

Monday afternoon:

'Aluminum Castings," Roy Paine, Director of Research, Aluminum Co. of America, Los

Trass and Bronze Castings," George Dreher, AFA Nat'l Director, Los Angeles.

'Core Blowing," L. D. Pridmore, v.p., International Molding Machine Co., Chicago.
"Foundry Sands," Sand Committee of North-

ern Calif. AFA Chapter, Harold E. Henderson, iron; James L. Francis, steel, and George Stewart, non-ferrous.

Wednesday afternoon:

"Steel Castings," speaker to be announced.
"Iron, Cupola Melting," Dr. J. T. McKenzie, American Casting Iron Pipe Co., Birming-

Thursday afternoon:

'Safety Code for Foundries," speaker to be announced.

"Standards, Inspection and Repair of Air-craft Quality Castings," T. E. Piper.

Speakers for the American Welding Society program are:

Monday morning:
"Hard Facing—A Major Factor in Manufacture and Maintenance," H. W. Sharp, Sales Metallurgist, Stoody Corp., Whittier, Calif.
"Welding Stainless and Heat Resisting Alloys," T. R. Lichtenwalter, Field Metallurgist,

Republic Steel Corp., Massillon, Ohio.
"Oxyacetylene Pressure Welding,"

Proctor, Development Engr., Menasco Mfg. Co., Burbank, Calif.

Tuesday morning:
"The Future of Resistance Welding," M. S. Clark, President, Federal Welding Co., Ohio. "Resistance Welding Applications," J. H. Cooper, Chief Sales Engr., Taylor Winfield Corp., Warren, Ohio.

'Possibilities of Electronic Control," G. W. Garman, Control Div. Engr., General Electric Corp., Schenectady, N. Y.

Tuesday afternoon:

"Electrode Alloys for Resistance Welders," G. N. Seiger, Pres. & Gen. Mgr. S.M.S. Corp., Detroit.

"Inert Gas Shielded Arc Welding," T. E.

Piper.

Wednesday morning:
"Submerged Arc Welding in Light Gauge
Metals," H. E. Kennedy, Albany, Calif.
"Thermit Welding of Rails and Large Cast
ings," J. B. Tinnon. Vice Pres., Metal & Ther-

Welding and Fabricating of Heavy Alloys for High Temperature and Corrosion Applica-tions,". Fred Boericke, Engr., Haynes-Stellite Co., Kokomo, Ind.

Wednesday afternoon:
"Modernized Fabrication," Earl Griffeth,
Plant Supt., Wooldridge Mfg. Co., Sunnyvale.

"The Coordinated Developments in A-C Welders and Electrodes," C. P. Croco. Mgr.. Welding Dept., Westinghouse Electric Corp., Buffalo, N. Y.

Thursday morning:
"Modern Design in Structural Welding,
Welding Faper Air Redui LaMotte Grover, Welding Engr., Air Reduction Sales Co., 60 E. 42nd St., New York City.
"Low Temperature Brazing," Herman Folgmer, Handy & Harman, Bendix Bldg., Los

Angeles, Calif.

In addition to the program of technical papers, lecture courses and round table discussions, the American Welding Society will have its official luncheon March 24. Lee Delhi, National AWS

(Continued on page 84)

# Ford Seeks Parts in West

Emphasis shifts from automobile assembly to parts manufacture in the West with Ford offer to buy \$50,000,000 worth of parts from California manufacturers. It marks a significant step forward in Western industrial development. It puts many of West's raw materials far closer to consuming market than ever before. It may mean cheaper automobiles.

ORD Motor Company's \$50,000,000 parts-buying program in California, formally announced last month, marks a significant step in Western industrial development.

It is the beginning of the transfer to California of a sizable proportion of the vast manufacturing operations now centered in the Detroit area. Furthermore, it puts many of the West's raw materials far closer to their consuming market than ever before.

In its broadest aspect, it is a recognition of the fact that the continent now faces two ways, West as well as East.

Assembly of automobiles and manufacture of tires has been carried on in California for about 20 years, the state being the second greatest center in the country for these two operations. Now the waraccelerated industrial development of the West has made it possible for parts manufacturing on a large scale.

Speaking before luncheon meetings in San Francisco and Los Angeles, Henry Ford II said his company hoped to purchase as many of its parts in California as possible. He threw out the challenge that "When you make a better product than your competitors, people buy your product." Ford said prices were too high, and in his company's effort to get the price of its car back to the level where it could be purchased by the masses, it turned to California's huge postwar industrial machine to help lick the problem.

The parts-buying program by Ford is of great interest to the region. Up until now Western automotive industry has been principally an assembly operation. Ford's offer is the second step toward building a full-fledged industry here in the West.

The plan came about because Western firms are proving they can compete on a satisfactory basis with Eastern manufacturers.

They are able to do that first because of the great war-time expansion in the production of iron and steel on the West Coast. Albert J. Browning, vice-president and director of purchasing, said. Secondly, he pointed to the new steel mills that have been built in the West, especially Geneva, which are giving Western industry an opportunity that it never enjoyed before. Thirdly, he stressed that the ex-

pansion of rolling mill capacity by both Bethlehem Pacific and Columbia Steel, was invaluable to the West.

Browning told of his company's experience with the Norris Stamping & Manufacturing Co. at Los Angeles. "Ken Norris was able to quote us prices below the delivered prices on the same items we were purchasing from an Eastern manufacturer," he said. "I called him long-distance and told him his prices were low and asked him if they included a satisfactory profit. He told me that I need not worry about him-that he knew his costs, and that the volume of business and type of business involved assured him of a very satisfactory profit.

"He went further and told me that his studies convinced him that his prices could continue to compare satisfactorily with our delivered cost on any eastern manufactured items he would produce."

In giving an analysis of cost figures, Browning said that the concern was saving more than five per cent on the \$15,-000,000 worth of parts and materials Ford was now purchasing in the West.

Here are examples of savings: A typical product delivered from the Western source to the Richmond plant costs \$3.69-cost in the East is \$3.74, to which must be added 78 cents for freight to get it out West where the company wants to use it. This

makes a total delivered cost of \$4.25 as against the Western manufacturer's cost of \$3.69.

Delivery cost on another item from a Western manufacturer was \$1.30. It could be manufactured in the East for less-\$1.15, but when 26 cents for freight was added it brought the delivered cost to \$1.41 as against \$1.30.

In another case a West Coast item cost \$14.81 while the eastern cost, \$13.92, plus \$1.53 freight, made a total of \$15.45 as against \$14.81.

The freight rates which have been a thorn in the side of the Western manufacturer trying to compete with the eastern manufacturer, are a boon when he competes with products of the eastern manufacturer as laid down on the West Coast, Browning said. He pointed out that freight from the east on items used by his company averages more than 10 per cent of the value of the item. That is a margin which gives the Western manufacturer an advantage.

There is no doubt that the Ford offer is a genuine one. It backed it up by sending its top men-Henry Ford II, president; Ernest R. Breech, executive vice president; J. R. Davis, vice president in charge of sales and advertising; and Browning, vice president in charge of purchasing. In addition, 18 Ford buyers were in attendance at both the San Francisco and Los Angeles exhibits where bids were sought for local manufacture of 2,600 automobile and truck parts.

The California Manufacturers Association, the Chambers of Commerce of Northern and Southern California cities, as

(Continued on page 98)

#### Westinghouse Equips for West's Needs

A further indication of Western industrial growth comes with the announcement by Westinghouse Electric Corporation that it has entered into a 10-year lease with option to purchase the Sunnyvale, Calif., plant of the Joshua Hendy Iron Works. Westinghouse took over the 57-acre Hendy plant, which becomes the largest of its 37 manufacturing and repair division plants, because of the huge Western demand

for transformers, switch gears, motors, generators, panel boards and switch boards. The company will therefore manufacture and repair equipment near its ultimate sale and use.

Actual management of the plant was taken over by Westinghouse March 1. Harry F. Boe, Pittsburgh, Pa., vice president in charge of all Westinghouse manufacturing and repair divisions, will direct operations of the new plant. Harry C. Gunetti, vice president and general manager of the Hendy operation, continues as general manager of the Sunnyvale plant.

Westinghouse will carry on Joshua Hendy's present production of heavy equipment, valves, custom built machinery and small steam turbines, and will increase operations by adding new products now being manufactured in the Emeryville, California, plant.

by adding new products now being manufactured in the Emeryville, California, plant.

When operations are in full-swing, it expects to increase employment from the 1,100 workers now at the plant to the wartime peak of 9,000 employees.

Sunnyvale is equipped with a large modern foundry, giant boring mills and metal planers that will enable Westinghouse to sub-contract work for other heavy equipment manufacturers on the West Coast, as well as handle its own production. This is the first time that Westinghouse will do sub-contracting work on the West Coast.

Hendy will concentrate its activities in its Southern California plant at Torrance and its Coasts.

and its Crocker-Wheeler division at Ampere, N. J., neither of which are affected by the Westinghouse transaction.

# HIGH TARIFF

### Is It Good or Bad for The Industrial West?

Mr. Kruckman in this article is expressing his own personal views on the highly controversial subject of the high tariff. "Western Industry" as the spokesman for the Industrial West would like to get the views of its thousands of readers, pro and con, so that a cross-section of opinion on the subject can be developed.

By ARNOLD KRUCKMAN ashington D. C. Edit Western Industry

ASHINGTON, D. C. - The security program - we now call national defense security - has as one of its major components a credit of \$5,000,000,000 to buy critical materials for the security stockpile. For months the experts from several agencies have been roving over the world securing materials. A recent discussion in Congress brought out the fact that of the 63 different kinds of materials procured only two were bought at home.

It was explained reasonably that the required materials cost far less when purchased abroad. Some one from the east finally produced the proposal that henceforth an equitable part of all purchases should be made in the United States, and that Congress should approve and order that the Government buyers may pay 25 per cent more for American materials than for these they can buy competitively in foreign lands.

But for some reason no one insistently during this discussion stressed why our own Government buyers could obtain materials so much cheaper elsewhere on the globe. Recently the issue was further brought to the fore by Senator George W. Malone, the new Republican Senator from Nevada; and by Rep. "Bud" Gearhart, of the San Joaquin Valley in California.

Obviously the fact is that the foreign cartels and governments can supply critical materials at a much lower cost because the standards of living in all other countries are far lower than they are in the United States.

Last fall this correspondent visited with the head of one of the greatest chemical corporations in the United States. It has several plants in this country as well as in South America and in the United Kingdom. This gentleman said that this corporation had found it could ship American coal to its plant in Wales, actually located directly above a Welsh coal mine, and pay freight from Norfolk, Va., as well as the excises in the United Kingdom, and get more efficient delivery and better coal than it could get abroad.

The correspondent later had the opportunity to ask British Cabinet Minister Bevin why such a condition could exist. Bevin is direct and unequivocal. He did not evade the issue of the lower standards of living; but he explained this particular situation this way: he said the economy of the United States, despite its higher standards and its higher wages, had been able to build up the ultimate in mass production by reason of its better and far greater resources of power, electrical energy.

Shortly after World War I this reporter had a long talk with Arthur Balfour, one of the greatest minds modern Britain produced. He put the basic idea this way:

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may

also be obtained free of charge.

it is the British system to evolve the highest standards of economic and cultural achievement by the same methods with which the floriculturist grows fine roses. You pluck the buds and the less promising flowers in order to permit the juices, the energy, to run into those few choice blossoms which eventually become the marvelous products of individual perfection.

In the United States, on the other hand, we cultivate many blossoms on the same plant, and obtain the greatest average perfection the floriculturist has ever achieved. It was Balfour's idea that the British system had evolved the finest standard of individual excellence the world had ever achieved, while the socio-economic system of the United States had produced the highest and most humanly satisfactory average excellence in the world's history.

Balfour clearly recognized the systems were antipathetical, and foresaw that the principle involved, one day would bring the basic trends into collision. He anticipated that the lower standards of living, almost universal except in the United States, would inevitably be expressed in economic conflict.

Men like Senator Malone and Representative Gearhart are deeply concerned because one of them, the Senator from

Nevada, a mining state, sees the possibility of stagnation creeping over some of the mining industries of the United States, while Gearhart perceives the same effect almost imperceptibly appearing in the agricultural and indus-



trial areas of the Western states, largely through the machinations of those who wish to restrict

# STANDARD ENGINEERS NOTEBOOK

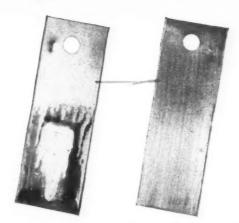


① Adhering agent in RPM Compounded Motor Oil Keeps oil film on all parts after engine stops, even on cylinder walls.

② Rustproofing compounds prevent moisture that condenses on cooling parts from contacting metal.

③ No rust is formed to scrape off when engine starts, and cause excessive wear.

Constant lubricant film provides adequate and instant lubrication when engine starts.



This actual photograph shows how one HIGH-QUALITY MOTOR OIL "peeled" off almost all of this test strip of steel when it was placed in corrosive-moisture conditions similar to those in a cooling engine. The oil concentrated at one spot and the unprotected surface quickly rusted.

RPM COMPOUNDED MO-TOR OIL kept this strip bright and shiny, completely sealed against rusting, when it was exposed to the same conditions. "RPM" compounds keep a constant rust-proofing lubricant film on engine parts at all times, whether they are idle or moving.

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FOR EVERY NEED A STANDARD OF CALIFORNIA JOB-PROVED PRODUCT

## High Tariff - Good or Bad?

(Continued from page 60)

farms to 160 acres — for instance — and those who wish to make some phases of industrial development subordinate to the development of cheaper power through the agency of great public power author-

The cheaper power obviously would establish the social controls that would restrict the size of industrial units and hamper free enterprise.

#### Pulling Down Our Standards

Thousands of well-meaning industrialists more or less enthusiastically approve the present policy of procuring basic raw materials and similar supplies from foreign countries, at much cheaper prices, on a long-range program, sincerely believing this means that we are building up markets for our goods abroad, and apparently utterly oblivious to the fact that we are pulling down our own standards and our own great production machine.

Not only, apparently, are we slowly throttling some of our own industries, and creating potential lack of employment, or lower-paid workers, but we are pouring, through our government finance institutions, billions into the low-standard countries to build them into the competitive system that slows down our own system. Commerce Secretary W. Averill Harriman has made this policy of financing the lowstandard economies of the world, to set them going, a matter of faith, and is preaching it wherever he goes.

It is amazing to find that the great majority of union labor leaders do not know what is happening. Where does it stem from? In the heyest of the heydays of the New Deal there were a group of very earnest, ardent, and utter radicals, who took much of their inspiration from Mordecai Ezekiel, then and now, in the De-

partment of Agriculture.

Day in and day out Ezekiel consistently preached it would be our postwar duty and responsibility to share our tangible goods as well as intangible assets with the rest of the world, so as to lift them all to a higher standard of existence. Not much was said about it, but by the same token we logically would level off a bit.

Came the revolt against the New Deal, and most of us assumed these ultra-radical ideas also went into the discard, so far as the actual physical operation of the Government and its policies are concerned. But as is now apparent, many of these extremists are in the Department of State, the Department of Agriculture, the Interior Department, and many other federal agencies. They are definitely in Congress under the leadership of Pepper of Florida.

Gossip from high places in the government reports that much of the momentum for many extremely progressive ideas is directed by Justice Frankfurter of the U. S. Supreme Court. That may or may not be true. But that is the gossip, and gossip here usually has some substance.

Senator Malone and Representative Gearhart, and others, who are coming to the front from the Western ranks, do not believe in free trade, or anything approaching free trade. Specifically, the sitution being what it now is, they believe we need tariffs to protect our own free enter-

Senator Malone has worked out a formula which apparently is the most sensible suggestion this reporter has heard for many years. He calls it the differential tariff. This system would work thus: the nations with the lowest standards of living, who can undersell us in such manner as to kill our industries, would be tariffed to the absolute limit in order to maintain our own economic advantages in our own country.

But as the low-standard nations rise in the scale of living and economic habits, our tariffs would automatically and slowly slope down. Eventually, when they have met our own standards and we can meet them competitively and yet hold our own domestic trade the tariffs would go down.

#### What Malone **Plans**

Under Malone's plan it would be possible for the U. S. Tariff Commission always to keep close watch to know just what is happening in the low-standard economies, and could, at any time advise the President of a given situation so that he might make the adjustments necessary. There never would be free trade in the sense that any other country could flood us with goods or materials we have in abundance and appropriate quality.

But it would enable us to take from the other countries those things we do not have, or in which our lack is obvious, and which we either need or want as luxuries. and we could balance the trade by supplying them with the things they need but do not have, or of which they do not have plenty.

Congress is definitely unfriendly to the reciprocal trade agreements which are to be negotiated at Geneva in April with the 18 nations. The hearings held here by the Department of Commerce, the State Department, and the U. S. Tariff Commission, were kept so deeply under wraps that it was literally impossible to get any genuine information about the discussions, or the briefs filed by business people.

The conference in London, which puzzled many people, was held mainly to work out in secret some rules for the Geneva showdown. But while Congress is unfriendly, it can do very little about the actual negotiations because it gave to the executive and administrative departments the power to make these treaties, without recourse, during the New Deal hysteria.

#### New Deal Lingers

The situation is typical of many other legislative powers the Congress passed over to the executive-administrative department, during the New Deal days. It is clear many of these powers must be recaptured by the Congress if the people wish that our government shall continue to be a democracy, with a free socio-economy.

There appears to be no doubt the people wish this nation to remain what it has been; but to make their wishes effective they must put the steam of their desire behind those members of Congress who are fighting to make the Congress twothirds responsive to democracy.

Rep. "Bud" Gearhart made a great talk about the Reciprocal Trade Agreements early in February. He told the Congress they "are give-away agreements." The Geneva Trade Conference contemplates tariff cuts as high as 50 per cent. The hearings here constituted a melancholy march of nearly one thousand representatives of agriculture, business and labor; it was for them a sort of "last mile."

The actual fundamental issue of free trade versus protectionism has never been clearly presented to the voters since the birth of the Reciprocal Trade Act and its various extensions.

Watch Senator George W. Malone of Nevada. He is typical of the West. He is an outstanding engineer. He has specialized in irrigation, reclamation, power, and flood control, as well as mines and mining. During the war he was the specialist Congress sent to the Aleutians, Alaska, and into the South Pacific, to study critical and strategic materials. He was the special advisor to the Secretary of War, as well as to the Secretary of the Interior.

He is the organizer and creator of that monumental work, the huge encyclopedia of Western resources published by the Industrial West Foundation. He looks Western, he speaks with the spirit of the Far Westerner, and he has the rangy open character you identify with the West. And he has energy and drive. The Senator knows his West, and he will fight for all the West as well as for Nevada.



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# WESTERNERS AT WORK ...

#### California

Leaders



R. E. Fishe

R. E. Fisher, prominent Bay area civic leader, businessman and vice-president, Pacific Gas and Electric Co., elected chairman of San Francisco Bay Area Council, succeeding Maurice G. Read. Frank E. Marsh is general manager. Other officers elected are: vice-chairman, Frank E. Boyd, pres., Pacific Electric Motor Co., Oak-

land; treas., E.V. Krick, v.p. and cashier, American Trust Co., San Francisco.

Herbert D. Imrie, of Abbot A. Hanks, Inc., San Francisco, elected v.p. of Western Div. of the National Council of Commercial Laboratories. R. W. Truesdail is pres.

W. P. Fuller Brawner, v.p. and treas. of W. P. Fuller & Co, and first v.p. of San Francisco C of C, becomes chairman of the S. F. Chamber's industrial dept. advisory committee.

Alvin C. Eichholz, mgr., World Trade Dept., S.F. C of C, serves as chairman of the second Institute of World Trade on April 10-11. . . .

Eugene E. Bennett, San Francisco, appointed to the natural resources committee of the California State C of C. . . .

#### Government

Two U. of Cal. professors elected to the general advisory committee of the Atomic Energy Commission. J. Robert Oppenheimer, theoretical physicist and a key scientist in the atom bomb project, named chairman, and Glenn T. Seaborg, a leading nuclear chemist, elected member of the nine-man committee appointed by Pres. Truman. . . .

Van Beuren Stanbery, economic analyst for Calif. Reconstruction and Re-employment Commission, starts area development work for U. S. Dept. of Commerce, San Francisco. . . .

Paul L. Kleinsorge, chairman of the tenth regional Wage Stabilization Board, named assoc, professor of economics at Stanford University.

Albert L. Clark appointed Pacific reg. information exec. for the Office of Temporary Controls, OPA. . . .

#### Manufacturers

Besler Corp., Emeryville, elects Timothy E. Colvin, formerly pres. of Aerco Corp. of Los Angeles, as exec. v.p. and director. James A. Habegger appointed comptroller, and Mary C. Moody, sec.-treas. . . .

Fred S. Carpenter appointed director of manufacturing for the U. S. Rubber Export Co., Ltd., which places him in charge of all

foreign factory operations. L. C. Boos is pres. of the export co. . . .

George R. Langlois appointed v.p. in charge of sales of Muirson Label Co., Inc., San Jose. Whitney Wright became v.p. . . .

Erle C. Cowgill named gen. mgr. of Plastics Industries Technical Institute, Los Angeles div. of Technical Crafts Corp. . . .

Richard F. Bailey, pres. of Pacific Tile & Porcelain Co., L. A., elected to the advisory committee of the Tile Council of America. . . .

Edwin Ross becomes gen. mgr., Van T. Pender sales mgr., and W. W. Stein sales promotion mgr. of the Pacific Coast branch of the National Silver Co., Los Angeles. . . .

Louis J. Healey appointed district mgr. of San Francisco branch, Pacific Coast div., U. S. Rubber Co. . . .

Hercules Powder Co. transfers John G. Copeland, Jr., from Louisiana, Mo., where he was asst. mgr. of the Hercules-operated Missouri Ordnance Works, to Hercules, Calif., as asst. supt. of the dynamite and ammonia plant. . . .

#### Transportation

Lockheed Aircraft Corp. appoints Bert W. Holloway sales development mgr. . . .

J. F. Kirkland appointed mgr. of transportation, sales and service for Pacific Coast district, Pelton Water Wheel Co., San Francisco, a subsidiary of the Baldwin Locomotive Works, succeeding C. D. Allen, appointed special representative of Standard Steel Works division of Baldwin.



• Pres. of McCulloch Motors Corp., newly organized Los Angeles firm, is Robert P. McCulloch, shown above at desk. Below, Gerald Robechaud, left, v.p. in charge of fooling, discusses machine-tool placement with chief engineer John Ryde. Both are McCulloch veterans.

Mayo H. Thomas appointed gen. agt. for Santa Fe Skyways, Inc., Los Angeles. . . .

#### Oil

Shell Oil Co., Inc., names W. H. Adams traffic mgr. succeeding Claude E. Donaldson, retired. Ernest R. Farley, fuel oil mgr., also has retired. D. B. Hodges, former exec. asst. in San Francisco, named v.p. of transportation and supplies for the company in New York. . . .



Claude E. Donaldson

Ernest R. Farley

Lloyd E. Tracy elected v.p. of Oil Well Supply Co., a U. S. Steel subsidiary, and also retains the position of general mgr. of sales. . . .

#### Utilities

Pacific Telephone & Telegraph Co. names F. A. Dresslar v.p. and gen. mgr. of the Northern California and Nevada area, succeeding R. E. Hambrook, appointed v.p. with systemwide responsibilities. . . .

#### Foods

General Mills, Inc., Sperry div., transfers R. L. Hickman, district mgr. Portland, to California, succeeded by R. B. Velps, Jr., formerly district office mgr. at Tacoma, Wash. S. F. Matthies becomes asst. to Velps. H. D. Van Zante named coarse grain buyer at Portland, succeeding Paul P. Taylor who becomes grain buyer at Spokane, Wash. . . .

Robert P. Klinkner joined San Francisco purchasing office of Hawaiian Pineapple Co. as expediter of purchases to the Islands. . . .

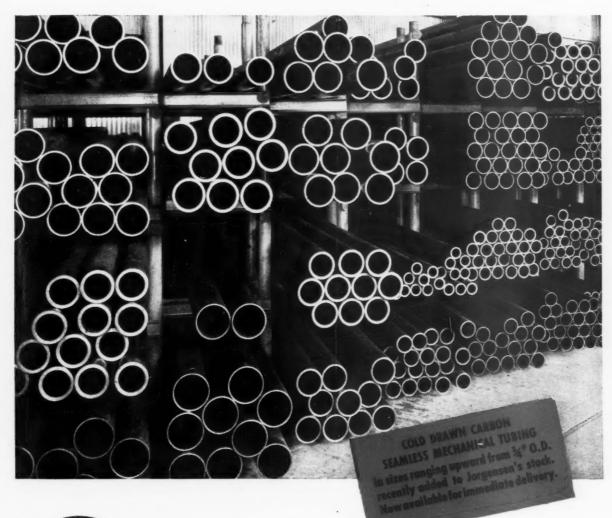
#### Shipping

Tom James, retired pres. and director of the stevedore firm Associated-Banning of San Francisco, joins the West Coast Terminals Co. William Bush is West Coast pres. . . .

Gen. Robert H. Wylie appointed mgr. of the Port of San Francisco for the Board of State Harbor Commissioners. . . .

Associated-Banning promotes Harold Germain to v.p. and gen. mgr., James P. Cribbin, v.p. in charge of Northern California operations, and Nick Miller, v.p. in charge of Southern California operations. . . .

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## WESTERNERS AT WORK...

#### Colorado

Morton E. Weichsel, senior industrial engr., appointed supt. of the industrial engr. dept., Colorado Fuel & Iron Corp., Pueblo, succeeding Rodney Irwin, resigned. . . At the Minnequa plant, W. B. Jacobsen, asst. supt., appointed supt. of rolling mills and the finishing dept., and William Meredith appointed supt. of the wire mill, both succeeding D. S. Muckley, resigned. . . .

The Solid Fuels Admin. field organization in the Rocky Mountain and Pacific Coast areas has been realigned following the death of Robert B. Griffith, reg. representative at Denver. Denver becomes an area office in charge of Frank A. Pomponio as distribution mgr., supervising the distribution of coal in Colorado, New Mexico and Arizona.

Walter I. Moyers advances from asst. mgr. of Swift's Denver plant to mgr., succeeding Paul N. Young, retired. . . .

John W. McAllister, former secretary to the president of Colorado Fuel & Iron Corporation, advances to executive secretary. . . . Chas. C. Tapparo appointed assistant superintendent of industrial engineers at Pueblo mill. . . .

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Harold Silver of Silver Engineering Works, Denver, becomes president of Rocky Mountain Employers Council; C. O. Voigt of Stearns-Roger Mfg., Denver, vice-pres.; Palmer Burch, treas.; James T. Logan re-elected secretary and managing director; Kenneth Browning of Salt Lake City joins staff to conduct training programs under direction of Charles L. Baker.

#### Montana

William G. Maloney, formerly inspection supervisor of the wage-hour div. of the dept. of labor, named mgr. of the new Butte office of the U. S. Dept. of Commerce, which will handle all Montana phases of a greatly expanded field service. . . .

Malcolm E. Holtz, Great Falls wheat farmer, elected chairman of the board of directors of the Helena Federal Reserve Bank, Helena. . . .

#### Nevada

Col. John R. Reilly appointed project administrator at Las Vegas, Basic Magnesium Plant, now in the process of disposal by WAA. He succeeds Mahlon Meier, who remains as project attorney. . . .

Arthur G. Woodward, engineer, retires after 36 years with Western Pacific R.R. in Winnemucca. . . .

#### Oregon

Pacific Telephone & Telegraph Co. names J. W. Johnson gen. plant mgr. in Oregon, succeeding C. P. Toussieng, retired. . . .

Sam I. Ritchey becomes district mgr., California Oregon Power Co., at Klamath Falls, succeeding Harlan P. Bosworth, named asst. to gen. mgr., J. C. Boyle, Medford. . . .

Reed Swenson appointed personnel director of Jantzen Knitting Mills, Portland, replacing E. C. Klindworth, director, who becomes mgr. of the new Vancouver plant now under construction. Harry Dalton appointed gen. supt. and Paul Haberfeld, designer-mgr. of winter sports section of the Vancouver plant. Paul De Koning is gen. mgr. of the Portland mills. . . .



E. C. Klindworth

Reed Swenson

John H. Pigg comes from Cincinnati to take charge of the Portland div. of the office of chief counsel, U. S. Bureau of Internal Revenue.

J. A. H. Dodd, formerly credit mgr. for Portland Gas & Coke Co., appointed mgr. of the utility's Willamette Valley district, Salem, succeeding Leif Bergsvik, retiring because of poor health. Paul F. Leary becomes mgr. of



credit and collection bureau with Robert D. Cole as asst. mgr. . . .

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Paul D. Scalley, formerly mgr. of Utah-Idaho Sugar Co., Idaho Falls, appointed Washington district mgr., Toppenish, Wash., succeeding R. L. Howard, retiring. W. J. O'Bryant, formerly mgr. of Salt Lake and Utah counties area, succeeds Scalley. . . .

Ralph Tuck named geologist in charge of the Western exploration div., U. S. Smelting, Refining & Mining Co., Salt Lake City. . . .

H. Byron Mock named administrator of the reg. bureau of land management, Salt Lake City, which has immediate supervision over all public domains in Utah and Colorado. The branch of range management headed by Chesley P. Seely, and Norman F. Waddell is regional chief of the branch of classification and planning. . . .

Blair L. Sackett, formerly gen. supt. of International Smelting & Rehning Co., Tooele, named metallurgical mgr., Salt Lake City, succeeding the late A. Burgess Young. Carlos Bardwell, formerly asst. supt. at Tooele plant, advances to gen. supt., and W. J. McKenna, formerly concentrator supt., named asst. gen. supt., succeeded by R. V. Kettner. In Salt Lake City, James H. Collins, formerly asst. to late J. B. Whitehill, becomes purchasing agt. and Glen A. Burt is new ore buyer, succeeding D. A. White. . . .

#### Washington



Douglas Fir Plywood Assoc. names Charles E. Devlin, formerly in charge of publicity and promotion, managing director at Tacoma, succeeding W. E. Difford, resigned. . . . . Winston H. McCallum succeeds Devlin as publicity director. . . .

Charles E. Devlin

George Gunn, Jr., pres., Kirsten Pipe Co., Seattle, only Pacific Northwest member of the National Distribution Council, which cooperates with the Dept. of Commerce. . . .

Centennial Flouring Mills Co., Tacoma, appoints Dwight E. Howell to feed div. to organize feed program for mills in Washington and Idaho. . . .

N. O. Cruver, pres. of the Wheeler-Osgood Co., Tacoma, elected pres. of the Fir Door



N. O. Cruver

pres. of the Fir Door Institute, Tacoma, succeeding J. P. Simpson, gen. mgr. of Buffelen Lbr. & Mfg. Co. Other new officers include: R. E. Seeley, v.p., Simpson Industries, Inc., of Seattle, v.p.; A. C. Peterson, Buffelen sales mgr., treas.; Herman Snider, production mgr. of Acme Door Co., Hoquiam, Wash., sec.; and Herman E. Tenzler, pres., Northwest Door Co., of Tacoma, trustee.



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# Will Coast's High Wages Put Our Firms Behind the 8-Ball?

More Workers Are Attracted to West Because of High Wages, Los Angeles Correspondent Reveals; Manufacturers Will Have to Trim Costs to Compete

OS ANGELES — If you still think the nation's high-wage center is located where it used to be—in New York and industrial New England—you'd better take another look.

A factual, dispassionate study by Dr. Ruth MacFarlane of the Haynes Foundation discloses some startling changes in

the local wage picture.

Though the war didn't alter the traditional spread between North and South, it did create two new high-wage regions—and as a result, the Pacific Coast and the Great Lakes region now rate as the nation's most generous paymasters.

Here's the story in figures:

In 1941, Los Angeles manufacturing wage rates were 4 per cent below the average of 26 major urban areas. They tied Chicago for twelfth place, being topped in ascending order by Kansas City, Buffalo, Indianapolis, Cleveland, Portland, San Francisco, Milwaukee, Pittsburgh, Seattle, Toledo, and Detroit, the latter leading the

procession with a wage index 133 per cent of the national average.

By mid-1943, Los Angeles had climbed above the average and continued to rise steadily until, by the war's end, it stood ninth among major cities. Of these top nine, four were West Coast cities.

#### Pacific Coast Mecca For Labor

As a region, the Pacific Coast topped all others in factory wages, with the Great Lakes area second and the Southeastern states at the bottom of the list.

What happened to living costs mean-

while, you ask?

With general wages zooming under competition from aircraft plants and ship-yards, the Pacific Coast's once low living costs likewise began to climb — and in 1945, stood highest in the country. But this rise lagged behind the soaring wage rates. While 1945 manufacturing wages were 44 per cent higher here than in the lowest-

wage Southern states, the spread of living costs amounted to only 14 per cent.

Los Angeles, in point of living costs, tied with Minneapolis for sixteenth place, while Seattle rated as the nation's highest. San Francisco ranked fourth, Portland tenth.

Now if Pacific Coast industrial workers found their pay envelopes well fattened, Western farm workers fared even better. As early as the spring of 1943, West Coast agricultural wages were more than 100 per cent higher than the national average and 37 per cent above the nearest regional competitor, New England. In the last two years of the war, this margin narrowed to 78 per cent above the U. S. average.

Regionally, daily farm wages in 1945

Regionally, daily farm wages in 1945 average \$7.70 in Washington; \$6.90 in Oregon; and \$7.30 in California, as compared with \$4.75 in Iowa; \$5.00 in Illinois; \$4.35 in Ohio; and an average of

\$4.12 for the entire U.S.

No wonder the westward migration hasn't slackened—and no wonder the sp-



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called "Okies" who returned home from the shipyards have repacked their bags and are back with us again!

Dr. MacFarlane does not attempt to point a moral, but merely to present the true situation-tangible effects of which are being felt in many quarters. For ex-

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(1) High wages continue to be a magnet drawing workers here from Eastern areas. Lately there has been an influx of highly skilled men such as expert tool and die makers-motivated, of course, to some extent by the fact that major Eastern industries such as Detroit's auto plants are now pretty well tooled up and jobs are scarcer there.

(2) Competition is being felt from areas which formerly were at the top of the wage pyramid. New England firms are beginning to offer such items as castings laid down in Los Angeles at prices lower than they can be produced at in many local plants.

#### Production the Answer

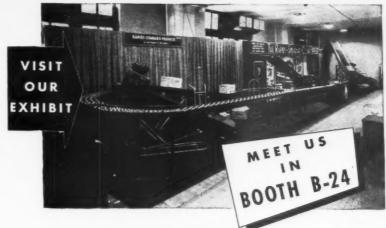
Real key to the situation, of course, is productivity. No satisfactory study has yet been made that can show whether Western plants have retained what many used to assert was a greater output per worker. The present cry of low productivity is nation-

There is evidence, however, that some Eastern manufacturers who opened West Coast branch factories have found actual labor costs too high and have shifted their local plants over to assembly work or distribution. Such tendencies, if actually existent, may be partially offset by the new freight rates, which will raise the differential favoring West Coast manufacture. At any rate, it is plain that time-tried economic laws are operating to restore the equilibrium that was upset by war-time industrial growth.

Such untoward happenings as these raise goose pimples on expansion-minded Westerners, who fear high wages will scare away new plants. They should bear in mind, however, that higher industrial labor costs may be strongly offset by the new lush markets here at home.

With agriculture still a major force in the West, a farm population whose wages are nearly double the national average is certainly an excellent local market for radios, washing machines, automobiles, and other manufactured goods.

Of possible interest in this connection is the recent prediction by Earl "Madman" Muntz, large automobile dealer who divides his time between his two businesses in New York and Los Angeles. Muntz ventures the opinion that within five years, Los Angeles will become the automotive manufacturing center of the country, thanks to the shift of money and manpower from Detroit centers to the West Coast. He also predicted that prices of used



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Rapids-Standard Booth at the first post-war Western Metal Show. Here you can discuss your handling problems with a staff of factory trained men who will be glad to consult with you and demonstrate the equipment to you. Here you can see for yourself the fine engineering and sturdy construction that are part of all Rapids - Standard equipment. DON'T MISS IT.

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### Coast High Wage Problem

cars locally would be 15 per cent below other U. S. cities within six months. Few share this extreme optimism regarding eclipse of Detroit by the West's embryo motor center, but the war-time and postwar floods of Eastern cars certainly have left high bench marks on local used car lots.

Observers are watching the situation with lively curiosity, awaiting the time when Fontana steel, home-fabricated into Kaiser-Frazer cars, may do its bit toward lowering production costs in this area. Can Western plants, with the nation's highest wage rates, integrate themselves to meet the Detroit giant's thoroughly integrated production lines? And will freight rates prove the trump card, turning the trick in favor of Western industry?

Dramatizing the new rooting of national firms in Western soil, Ford Motor Company is bringing a contingent of its purchasing agents to this area to spend more than \$50,000,000 a year for California-made components. Like the war-time "defense train" that took OPM sub-contract hunters to every part of the nation, exhibits at Los Angeles and San Francisco will present samples, blueprints, and all production

data calculated to attract local suppliers for some 2600 different automobile and truck parts (see page 59).

The Los Angeles Chamber of Commerce, still awaiting final Federal Court decision in its thus-far successful battle for major freight reductions on Coast-bound Geneva steel, is opening attack on two other fronts. It seeks (1) to persuade transcontinental railroads to publish a rate allowing shipments of less-than-carload lots at lower freight rates than heretofore, and (2) to secure an eastbound all-commodity freight rate comparable to the existing westbound rate from Chicago, eliminating the situation under which some shippers sending goods west enjoy lower rates than for the same commodities shipped east.

Healthy growth in Arizona industries is reflected in a 26 per cent jump in mining employment in 1946, while construction activities have brought employment in housing, roadbuilding, and heavy construction to a level nearly 60 per cent above the war-time low of mid-1944.

Phoenix's two major surplus war plants are humming under their new operators, with Reynolds Metals busily turning out aluminum extrusions in the former Alcoa plant, while Premier Metal Products, in the ertswhile AiResearch property, converts various aluminum components into building hardware. Substantial orders from Mexico now are being booked.

"Grass roots" growth of southern California is vividly reflected by the heavily burdened utility companies, which are still trying to cope with five years' cumulative needs for expansion. San Diego Gas and Electric has added 14,000 new customers since V-J Day, has 4000 still waiting for service, and plans to spend \$19,400,000 in the next two years for improvement, including new gas capacity, pipelines, and a network of 66,000-volt transmission lines to suburban and rural areas.

In the Coachella Valley and the Palm Springs desert section, where spectacular growth has taken place in date and grapefruit production as well as subdivision activities, harassed power companies cannot keep abreast of the flood of new service requests, let alone catch up with the backlog of orders for extensions into new sections.

Power consumption in Los Angeles now is well above the war peak, though no longer swelled by the mighty 120,000-k.w. load of the Alcoa aluminum reduction plant.

The silk-stocking town of Pasadena has capitulated to the onward march of in-



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Western Metal Exposition and Congress

dustry by permitting establishment of carefully selected (and non-smog-producing) plants in its outskirts. City planners, aware that such scientific centers as California Institute of Technology and the Carnegie Institution have attracted a wealth of young, highly skilled technologists, have been persuaded to allot a part of a new 1000-acre residential tract to light industry. The city's industrial payroll is up nearly 15 per cent. Typical small plants in the engineering and scientific instrument fields show average hourly wages of \$1.50 to \$2.25. Jena-like development may make the area the hub of Western scientific equipment production.

Bolstered by an RFC-guaranteed market contract and \$1,500,000 loan, General Panel Corporation is grooming for production of 8500 plywood "prefab" homes in a surplus war plant formerly operated by Lockheed at Burbank. The 2-bedroom house, marketed by Celotex Corporation, will sell at about \$5875, including \$900 for a lot. Another pre-fabricated product made its world premiere recently when Fox-West Coast opened at Long Beach a factory-built theater designed by Kaiser.

Grouping of many smaller reconverting firms into single marketing outlets is helping solve selling problems. One such hookup, in which Inter-Coastal Company acts as exclusive national distributors with some 931 outlets, turned in a 1946 sales record of more than \$8,000,000.

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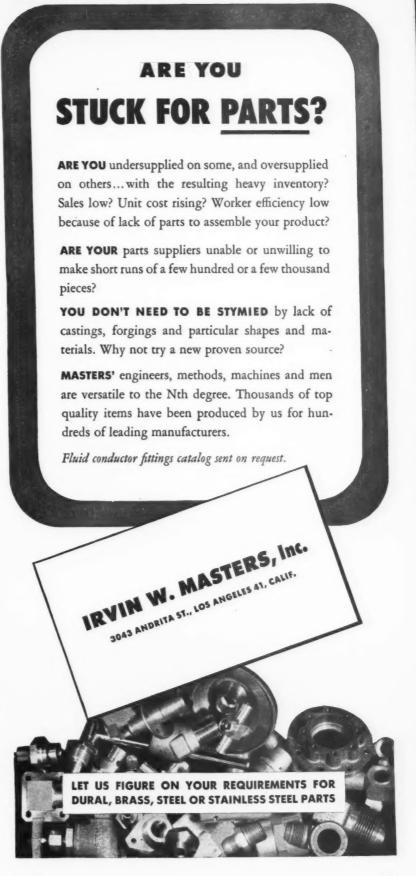
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It marketed \$1,600,000 worth of kitchen tools, barbecue tools, and color slide viewers for Adel Precision; \$750,000 worth of electric clocks for Sheffield Instrument; \$1,500,000 in fishing reels for Aerco Corp. (now part of Adel), and \$3,200,000 worth of vacuum cleaners made by Interstate Engineering Corp.

Contrary to the national trend, which shows that 90 per cent of the nation's veterans have found jobs, unemployment of veterans in Los Angeles area is higher than among other male workers in the labor force. This condition may be laid mainly to the tremendous stream of returning servicemen flowing through West Coast ports, but another factor doubtless stems from employers' unwillingness to experiment with the "unadjusted" youngsters who have not yet found their niche.

Quit rates recently have been running 50 per cent higher among veterans, although many employers have found the ex-GIs more earnest and willing to work than civilians with a war prosperity hangover.

In an effort to improve the situation, the Los Angeles Veterans Service Center has opened a counselling and testing service where a 64-man team of guidance specialists will try to help veterans work out their post-war plans and fit them where they really belong in the industrial picture. Modern personnel and scientific aptitude tests will supplement modern personnel methods in sizing up the new candidates for civilian jobs.



# Employers Would Get Right to Present Their Views to Labor Under Morse Labor Amendments

Morse Would Amend Wagner Act Three Ways: Enlarge Membership on the NLRB. Give Board Power Over Jurisdictional Disputes, and Employers the Right to Defend Themselves, Western Industry's Northwest Editor Reports.

PACIFIC NORTHWEST—The attitude of the Northwest's leading industry on labor legislation received a tentative trial recently, and led to the conclusion by one observer that management is probably not united behind strong antilabor legislation; that the majority of management will probably be well satisfied with labor legislation that will equalize the rights and responsibilities of labor and management.

Senator Wayne Morse (Rep.) of Oregon spent several days at home early last month, and during his stay delivered the same address to at least three business groups, two of which represented a large portion of the logging and lumbering industry. Senator Morse prefaced all three of his talks on labor legislation with a discussion of foreign policy, without which no discussion of domestic policy would be complete, he said.

As a part of his stand on foreign policy, Morse recommended decreasing tariffs as a means of aiding the economic rehabilitation of other nations of the world. Among industrialists in the Northwest this view is definitely not popular since the West Coast Lumbermen's Association has already stated its opposition to the reduction of import duties on lumber, and the fishing industry in Seattle was successful in persuading the industrial committee of the Chamber of Commerce to oppose imports of fish from the Orient.

Morse told the West Coast Lumbermen at Portland, and the small sawmill operators at Eugene that he believed labor legislation by the Congress should be confined to amending the Wagner Act, and outlined three amendments which he said he intended to sponsor in the Senate. The first of these would provide for enlarging the membership of the National Labor Relations Board to seven and departmentalize the board to function in three sections. Decisions of the individual departments would be supported as final by

the board as a whole, except in cases involving board policy.

The second proposal would give the board power over jurisdictional disputes, and place enforcement of jurisdictional settlements by the board in the hands of the courts. The third would return to employers their right to go before their employees with discussions of labor controversies. While Morse definitely opposed the use of strikes and boycotts by unions in jurisdictional disputes, he also opposed both anti-strike and anti-industry-wide collective bargaining legislation.

Both of the latter, he said, are not only contrary to the rights of both labor and management, but are impractical and unenforceable. In general these ideas seemed to meet with the approval of a great many of the individual members attending the meeting of the West Coast Lumbermen's Association, and the small saw mill operators attending the area conference of the Pacific Lumber Remanufacturers' Association.

SEATTLE — Processing of waste wood into a type of building board by means of a new method of treatment will be in progress here in three or four months, according to an announcement from the Goss Engineering Co. O. P. M. Goss and Worth Goss, father and son partners in the organization, report that they have successfully operated a pilot plant which utilizes a binder extracted from rotted trees. Although details of the process have been held as a closely guarded secret, the Gosses told newsmen that fungus in rotting wood destroys the cellulose portion of the wood and improves the binding quality of the lignin. Pulp from waste wood is mixed with the extract and subjected to heat and pressure which produces a hard, strong, ungrained board. An immediate start has been promised on a plant which will be capable of producing 20,000 square feet of half-inch board (sheet lumber is the term used) daily.

Among other comments, Senator Morse stated his opposition to continuation of government-forced settlements of labor disputes, and his belief that during the war industry had become too dependent upon the government for such forced settlements. This sentiment for a return to a more free economy was echoed a week later in Seattle under somewhat different circumstances.

On the latter occasion two representatives of the Western sugar industry appeared before the industrial committee of the Seattle Chamber of Commerce to ask for the indorsement of a resolution requesting continued governmental control of sugar distribution and pricing. Discussion of the subject waxed hot and heavy with many opponents of the resolution stating their unequivocal opposition to continued governmental control of industry in any form, in spite of the logical presentation made by the representatives of the sugar industry.

The fact that the resolution won the approval of the committee members present by a narrow margin is beside the point. The occasion was indicative, not only of a strong opposition to continuation of government controls, but of a growing belligerency among the opposition, as well.

Hydroelectric power, the most important of all the tremendous undeveloped natural resources of the Northwest, has been very much in the news this past winter, as has been indicated in this column several times in the past. Instead of quieting down the discussion bids fair to become increasingly vociferous with proponents of both public and private power companies agreeing that the Northwest is in dire need of additional generating capacity.

Although hydroelectric power is an important resource wherever it can be developed, and its importance in the West has always been acknowledged, the position of hydroelectric power in the North-

PORTLAND—Production of a new hand-filing guide for sharpening hand saws with precision has begun as one of the latest additions to the industrial circle here. The device is produced by the Speed Corp., headed by James H. Speed, inventor of the device.... Northwest Resin Products, Inc., will erect the first plywood glue manufacturing plant here. The newly formed organization is headed by Andrew T. Nelson, and has applied for permission to erect a plant which will produce a phenolic resin using less phenol than most adhesives of this type.

west is unique. The states of Washington, Oregon, and Idaho are practically devoid of any sources of power other than hydroelectric. In other parts of the West this is not true. California, New Mexico, Montana, and Wyoming have oil and gas deposits. Wyoming, Colorado, Utah, and Montana have coal deposits.

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Most of the remaining Western states lie sufficiently close to these deposits of fuel to make use of them, but such is hardly true of Oregon and Washington, particularly the Coast slopes of both states. Estimated coal reserves in southwest Washington are about 20,000,000,000 tons, but of this tremendous tonnage only a small percentage is as high in grade as bituminous and the greater part is sub-bituminous and unfit for industrial use in its present form. Oregon has small amounts of coal, some on the Coast near Coos Bay, and some in Washington county with minor production,

The quality of such coal deposits that do exist in the Northwest will probably prohibit their use as a source of electric energy development. Such steam generating plants as are in operation in the Northwest use petroleum products as a fuel, and the oil is largely shipped up the Coast by tanker from California.

#### Northwest Cannot Depend on Oil For Power

Evidence of petroleum deposits have been found from time to time in the Northwest states, particularly along the coast of the Olympic Peninsula in Washington. Explorations by major oil companies in the past has failed to reveal any usable fields, and although three companies are at present engaged in exploration operations in Washington and Oregon, it hardly seems likely that oil or natural gas will ever be able to supply a usable source of electric energy generation.

All of this leads up to the fact that the four Northwest states of Washington, Oregon, Idaho, and Montana have within their boundaries about 40 per cent of the total potential water power in the entire nation. On the other hand in 1944 the actual installed capacity of hydroelectric plants in these four states constituted only 20 per cent of the total hydroelectric in-

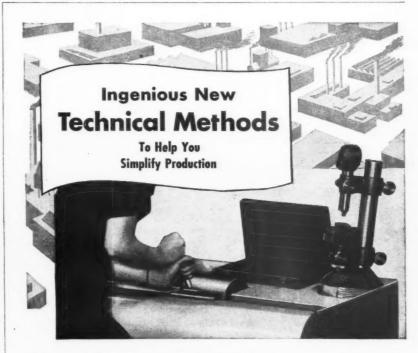
stalled capacity in the United States, and while that represents a greater than proportionate share for the Northwest, it still accounted for less than 12 per cent of the probable installed capacity if the full potential were developed.

Lacking the resources of coal and oil, it would seem as though the Northwest is entitled to considerably greater utilization of its single power resource. Certainly, if industry is to develop the other natural resources of the area, development of the hydroelectric potential must keep pace or even precede other phases of industrialization. As has been noted in recent months, the consumption of electric power is dangerously near the present generating

capacity, leaving a bare minimum of reserve in standby steam plants.

Bonneville Power Administration, which distributes on a wholesale basis the power generated at federal projects in the Northwest, primarily Bonneville and Grand Coulee dams, has since last fall been calling attention (rather too loudly in the opinion of many) to the present situation of reserve power and approaching demands for additional large blocks of power. During the month of January the Northwest Power Pool held a series of meetings in Tacoma to discuss the situation.

The Northwest Power Pool is an organization of five privately-owned electric utilities, and the municipally-owned sys-



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tems of Seattle and Tacoma to provide interchange of power to meet emergencies. After a series of private meetings, representatives of the member organizations came out with about the same answer that Bonneville had been talking up for several months past.

The conclusion announced by this group was that before November 1, 1949, the area served by all member systems would require new generating capacity of 318,000 kilowatts over and above the 745,000-kw. capacity of units now on order (principally for Grand Coulee dam). Further, it was said that by November 1, 1953, there will be required 1,565,000 kw. for which no generating capacity now exists or has been ordered.

Recommending a seven-year development program to meet present and future power demands in the area, the pool representatives agreed that the expansion should come through the federal government's program for development of the Columbia River, a rather unusual stand for some of the private companies which are members of the pool. The statement of policy issued after the final conference late in January said, "... provision for future supplies of electric power adequate to maintain continued industrial, agricultural, and utility development in the Pacific Northwest depends upon the con-

TACOMA—Employment of production personnel was begun last month at the plant of the Tacoma Powdered Metal Co., only plant of its kind in the country, and the only powdered metal plant in the West. Various sections of the plant have been in the process of shake-down runs, and regular production of powdered iron is expected to begin in March. Much of the plant equipment that has been specially designed has already proved successful. . . . First of the two pot lines at the Permanente aluminum reduction plant was scheduled to go into operation by the first of March, and by the end of the month both pot lines are expected to be in full operation.

struction of multiple-purpose projects on the Columbia River and its tributaries. The federal government, by various acts of Congress has assumed responsibility for such construction; and privately-owned industrial and power distribution enterprises have recognized this assumption of utility responsibility by the government, and have planned their investment and development programs in the belief that this federal policy will continue."

The power executives evidently feel quite strongly on the dual situation, as is evidenced by a tentative call for a meeting of representatives from all chambers of commerce in Oregon and Washington early in March. The chambers of Seattle, Portland, Tacoma, and Spokane have already agreed to present to their members the urgent need of increased power, and to lay plans for informing the Northwest congressional delegation as to the urgency of the situation. The March meeting will undoubtedly be the stage for a definite promotion program.

Any program to speed up installation of generating facilities in the major federal projects in the Northwest is bound to encounter many obstacles, some of which have already appeared on the horizon. Principal power source in the Northwest is, of course, the Columbia River on which both Bonneville and Grand Coulee dams are situated. The total hydroelectric generating capacity of the Columbia and its tributaries is actually an unknown factor. It has been roughly estimated as high as 25,000,000 kilowatts which is nearly twice the potential hydroelectric power which the Federal Power Commission estimates would be available 90 per cent of the time in the four Northwest states, and about the same amount above the total installed hydroelectric capacity in the entire United States in 1944.

Skipping for the time being objections which will be raised on a national scale, there are two local obstacles of some importance which must be overcome. Con-



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SPOKANE—The supersonic research center proposed by the Army Air Forces, for which one recommended location is the Moses Lake area about 90 miles southwest of here, will require 750,000 kilowatts of connected electric energy. This would be equal to all of the output from McNary dam plus the output from the first three units of Foster Creek dam. The former has been authorized by Congress, but construc-tion is still indefinite, while the latter is still in the preliminary report stage. To provide five basic wind tunnels costing from eight to 42 million dollars each, the research center has been placed on a four-year construction schedule with total construction cost set at a billion dollars. Before any final decision can be made on the plant Congress will have to determine three basic policy points including establishment of a new air research agency, whether aid to the aircraft industry is appropriate, and whether such research would be consistent with any disarmament program that may be established.

struction of dams on the Columbia River has always been opposed by the fishing industry of the Northwest. Last month the Columbia Basin Fisheries Association in a statement to the Oregon legislature strongly opposed construction of any additional dams on the Columbia for power generation until all possible generating capacity has been installed in existing structures. or for irrigation until all of the 1,000,000 acres in the Columbia Basin project in eastern Washington have been supplied with water. Adoption of such a policy would effectively block construction of additional dams for a period of 10 to 15 years, and would not result in any appreciable increase in the amount of firm power available to industry.

The fishing industry of Oregon and Washington, according to the Bureau of Fisheries administrative report No. 14 for the year 1939, employed a total of 15,500 fishermen who brought in during the year catches with a total value of \$7,597,000. The processing and wholesaling portion of the industry employed an additional 2,100 persons on a payroll amounting to \$2,953,000. Value of the manufactured product was set at \$12,030,000.

Another strong opponent of dams is the sports fishing group. It is difficult to estimate the value in this case in any tangible form. The states of both Oregon and Washington place the tourist as either the No. 1 or No. 2 industry of each state. Sports fishermen are inclined to take the credit, deservedly or otherwise, for practically all of the attraction of tourists to the Northwest. Regardless of whether or not it might be felt that sports fishermen are vocal out of all proportion to their importance, the group does have a great deal of strength and is not hesitant to use it.

From the national standpoint, any pressure for speeding up construction of power facilities will encounter first an economyminded Congress. Beyond that, for what-

ever it may be worth, is the reported opposition of eastern industrialists to the financing by the government of a basic industry which would offer strong competition (through sale of cheap power to Western industry) to established industry in the West.

## Here and There in Pacific Northwest

#### Douglas-Fir Industry Hews Big Production

Some \$280,000,000 worth of lumber for housing and construction was manu-

factured during 1946 by the Western Washington and Oregon Douglas-fir industry. More than 6,000,000,000 board feet of Douglas fir was produced in the year, half of which went into home construction.

Transportation lines received \$78,000,000 from sawmills for carrying the volume of lumber to every state in the union. Forest-land owners received \$14,592,762 for stumpage converted into lumber.

Investment in sawmills, timber, logging equipment, railroads, truck roads, fire-prevention and protection equipment was estimated at \$1,000,000,000. More than 120,000 persons were employed directly in logging and lumber manufacture.



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#### Fiber Board From Douglas Fir Trimmings?

An experiment designed to determine the feasibility of utilizing thinnings from stands of second-growth Douglas fir in the manufacture of fiber board has been started by the Oregon state forestry department in co-operation with the Fir-Tex Company of St. Helens, Ore.

Trees which will be used have already been marked and the timber will be cut in eight-foot lengths for transportation to St. Helens from the state forest in Columbia County.

Art Lundeen is carrying out the Fir-Tex Company's part in the project. S. L. Miller and C. W. Hoke are representing the state forestry department.

#### Industrial Resources Group in Columbia Basin

Raw materials available in Oregon, Washington, Idaho, Alaska, the Hawaiian Islands and the Orient which will be needed by industries wishing to locate in the Lower Columbia Basin area will be surveyed by a joint committee of businessmen from Oregon and Southern Washington.

Arthur L. Fields, chairman of the industries committee of the Portland Chamber of Commerce, has been chosen temporary chairman to head the new research group.

#### Land Management Regionalized by Krug

San Francisco will be regional headquarters for California and Nevada for the new Bureau of Land Management set up by Secretary of Interior Krug. The new bureau consolidates the former grazing service and the general land office.

Other Western headquarters for the field organization of the Bureau, which has been divided into five geographical regions, are at Salt Lake City, Utah; Portland, Oregon; Billings, Montana; and Albuquerque, New Mexico.

#### Reserve Fleets Continue to Grow

Some 61 merchant ships were added to the U. S. Maritime Commission's reserve fleet in Western waters during the month ending December 15. During the same period 11 ships were withdrawn.

The status of the reserve fleet as of December 15 on the West Coast was:

Suisun Bay, Calif., total 396. Astoria, Ore., total 104. Olympia, Wash., total 96.

#### Research Lab

Research in Douglas fir and other Western species will be carried on in a new Pacific Northwest laboratory just opened at the Wauna, Ore., plant of the American Lumber and Treating Co., Chicago. Facilities include a pilot plant of sufficient size to handle pressure treatment of full-length lumber items, resin impregnation apparatus, and equipment for gluing pressure-treated wood into large structural members.

William A. McFarland, chemical research engineer who has been in charge of process control for the company's 10 plants, will direct research. He is a member of the committee on preservatives of the American Wood-Preservers' Assn.

#### Idaho Doubles Gold Output

Idaho's mines yielded twice as much gold in 1946 as they did in 1945, the U. S. Bureau of Mines reports, while the state's production of silver, lead, copper and zinc was down from 1945.

Though lead production decreased, Idaho's yield was highest in the nation, and zinc production was highest among the Western States.

Gold production in 1946 stood at 41,-500 ounces valued at \$1,454,250, as compared with 17,780 ounces valued at \$622,-300 in 1945.

#### Want Flax Mill

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# Mountain Area Wants Industry; Stockmen Hurt by Land Policy

Debates Soon Will Be Raging Over How Extensively the Mountain States Should Be Industrialized, Western Industry's Denver Correspondent Reports.

ENVER — Too many Westerners are trying to make sow's ears out of silk purses in the drive to hurry the industrialization of virtually all parts of the Western world. This is the judgment of a few observers who prefer not to be mentioned, but who have begun to offer some resistance to the notion that nothing helps a community so much as having a factory payroll or two. There is something to be said for the matter of diversification but specialization still has its champions. Their talk sounds like this:

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"To hear the arch-deacons of industrialization talk, it might seem silly to build automobiles anywhere except at the door of the steel mills, which would be smack on top of the iron-ore pits. And the

only sensible place to manufacture shoes would be right on the farm where the hogs and cows are raised, because that is where the slaughter houses and packing plants would be situated. Wyoming thinks the woolen mills ought to be out on the Powder River where the sheep are raised, and Colorado would make gasoline and other petroleum products right at Rangely field, where the oil is, although the nearest railroad is about 125 miles away. There is much to be said for processing raw materials in the raw materials states, but a lot of the talk now going the rounds is plain hogwash."

Within the next few months, there may be some full-dress debates on this issue.

Not since the days of such great conservationists as Gifford Pinchot and Teddy Roosevelt has there been so much steam behind the drive to split up the public domain and let private operators do with it what they will. The drive is intensified by the current animosity against "bureaucrats" and the ascendency of the Republican party, although the great strides of the original conservationists were made under Republican regimes. Anyhow, many a canny businessman considers the present the ideal time to "move in" on the 130,-000,000 acres of land held by the Federal government in trust for all of the people today and through the years ahead.

Hear what militant words one livestock man says, and this is J. Elmer Brock of

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Kaycee, Wyoming, vice chairman of the joint livestock committee on public lands and a leader of the rugged individualists:

"If the livestock industry — the backbone of Western economic life—is to survive, the time has come to place public grazing lands in the ownership of the cattlemen and sheepmen who use it in the conduct of their business.

"Administration of those grazing lands by various bureaus under systems of Federal overlordship has harassed the stockmen of the West for years and left them at the mercy of the whims and edicts of bungling officials. . . . The grazing lands of the West comprise the producing plant of the livestock industry. As a first step toward acquiring ownership of the land they use, stockmen are proposing that the government be required to offer for sale to grazing permit holders approximately 130,000,000 acres being administered under the Taylor grazing act.

"The stockmen propose to buy this land on a basis of 10 per cent down, the balance to be paid over 30 years and to carry interest at the government rate of 1½ per cent. The price proposed by the stockmen for the public land is an amount equal to the value of the livestock it would support, which would make the land worth from less than \$1.00 per acre to several dollars per acre, depending on the quality of the tract involved. The Federal gov-

ernment would retain all mineral rights. The areas the stockmen would take over in this fashion comprise approximately half of the total areas of 10 Western grazing states, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah and Wyoming."

#### New Mexico's Growing Pains

Producing some \$200,000,000 worth of raw materials every year and watching other states take the same materials and realize \$600,000,000 by converting them into finished goods makes New Mexico sick, says Fremont Kutnewsky of New Mexico Magazine.

"We have to travel from 300 to 1,000 miles to see a stage show, an ice skating rink, a trolley car, an escalator, a building over ten stories high, a complete department store, a natatorium, a hotel with more than 250 rooms, an amusement park, a stadium seating more than 5,000 people or an auditorium seating more than four or five hundred people."

Mr. Kutnewsky is one of the champions of industrialization as the cure for what ails his part of the West, "for the same reason that the 13 original colonies developed manufacturing. That is, to get the better things of life you must produce at least part of what you consume. You can't expect to get an even trade—raw materials for finished products."

But aren't the tourists the cure-all for the Westerners' ills? Not according to the New Mexico sage. He says, "You can't grow rich waiting on the tourist trade because that requires facilities. In poor years the tourists stay away or curtail their spending, while your facilities keep right on costing money to maintain."

Colorado's state chamber of commerce, to which most of the local chambers belong, at last is getting out from behind its pedagogical disguise and paying some attention to plugging the state's various

ndustries.

#### Colorado Chamber Grows Up

For years it has seemed that all the state body could find to do was to pass along the propaganda of the national organizations such as the U.S. Chamber of Commerce and the National Association of Manufacturers. Much of their boilerplate argument on economic and political issues seemed to have little or no understanding of life as it is lived in the West. While that stream still flows and carries some of the same discoloration, the Colorado state chamber is growing up. Particularly is this evident in "Colorado Business," a well-edited monthly bulletin with a minimum of argument and a maximum of factual and even eye-opening news about industries in Colorado. While a considerable portion of each issue is filled with routine reports covering chamber of





commerce activities, many handsomelyillustrated articles are creeping in and the right foundations at last are being laid for a program to let the world know what Colorado is up to. "Colorado Business" will be sent to anybody for \$1.00 a year; address Room 512, Chamber of Commerce Bldg., Denver 2, Colorado.

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#### Hands Across the Rockies

One noteworthy postwar trend is the activity of Pacific Coast firms in the Rocky Mountain states. In no field is this more evident than in the petroleum industry, in which California oil operators have been scoring noteworthy success by opening up important new oil fields in the states of the Continental Divide area. Most significant of these is the development of Rangely oil field in northwestern Colorado, largely the doing of the California Company, a subsidiary of the Standard Oil Co. (California).

How the states of the Rocky Mountain area are reacting to this "invasion" by Pacific Coast interests is answered by the Oil Reporter, semi-monthly petroleum journal of the mountain states published in Denver.

"West Coast oil operators and equipment firms are playing leading roles in the rapid development of new oil fields in the Rocky Mountain region," the *Oil Reporter* says in an editorial.

"In many respects, the enterprising leaders from California are stimulating mountain states oil development in a fashion comparable to that of a generation ago when William Randolph Hearst and his associates with millions from the Comstock Lode and other far western gold operations, multiplied their wealth by putting the great Home Stake gold mines at Lead, in the Black Hills of South Dakota, on a mass production basis. The California influence is manifest also in the rapid expansion of the air transport routes of the mountain and prairie states by Western Air Lines, Inc., which has its headquarters at Los Angeles. Many other examples could be cited.

"Everybody stands to gain by the 'hands across the Rockies' policy, and the residents of the Rocky Mountain area extend a hearty welcome to the resourceful Californians who seek new fortunes here."

If you see somebody in the state of Montana, or Idaho, or any other part of the Northwest walking as if on a big pink cloud, the reason may have something to do with a look in the mirror. The mirror, in this instance, is a big illustrated booklet one size larger than an issue of Life magazine, with the title, "Pacific Northwest Playground." Published by Pacific Northwest Broadcasters, it is a bit of tourist bait that would make even a Texan head for Montana and its sister states and provinces in the Northwest. Yes, the book

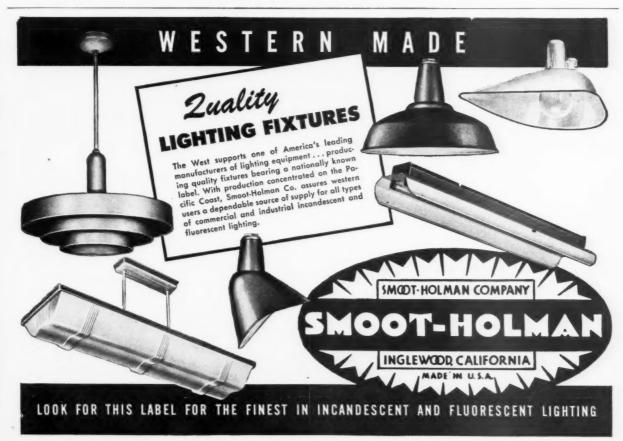
disdains international boundaries and does as good a job for Alberta and British Columbia as it does for other parts of the region it covers. Of course there may be some who will quibble, "When did Miles City, Montana, become a part of the Pacific Northwest?" Anyhow, the beauties of the Treasure State and its neighbors are pictured so beautifully and commented on with such engaging good humor that all hands vote a loud hurrah for the string of broadcasting stations that fathered this superb promotional piece for "the scenic wonderland of the world." If you want a thrill, write for a copy (send along four bits) to Pacific Northwest Broadcasters, KXLF, Box 156, Butte, Montana.

#### Nevada Second In Mercury Output

When mercury production in Humboldt County, Nevada, shot up 166 per cent in 1945, it raised Nevada to second place among the nation's mercury-producing states. Not since 1930 had the state ranked so high in mercury production.

Announcement of Nevada's place came from Matt Murphy, state inspector of mines, Carson City, who took his figures from those compiled by the U. S. Bureau of Mines.

Humboldt County mines set their record with a production of 4,050 flasks, out of the state's total of 4,338 flasks, during 1945.



# Growing Pressure in Utah For Higher Tax and Labor Law Change

Industry Faces Increased School Tax in State-Wide Levy, While Unions Will Fight Labor Law Revision, Reports Our Salt Lake City Correspondent.

ALTLAKE CITY—Industry and business of this area are watching the biennial session of the Utah legislature this year with mixed apprehension and hopefulness. The apprehension arises from the continuously growing pressures for more tax revenues, which is nothing new. The hopefulness arises from a suspicion that at long last the lawmakers are disposed to reexamine the collection of labor laws which they have written into the statutes during the past 16 years.

On the tax side, major industries are sure to be given one increase. A program to raise substantially the state's share of the public school costs was approved in principle by the electorate in the last election and it will be implemented with legislation by the current legislature. The shift in emphasis from local levies to a state-wide levy will be to hike the property taxes of the larger industries, whose high valuations have served to keep school taxes down in the districts in which they are located.

A five cents per ton severance tax on all natural resources removed for processing or sale has been proposed but it does not appear to have formidable backing. If enacted it would fall heaviest on the metal mining industry, the new steel industry, and coal. An unsuccessful effort was made two years ago to impose a similar tax. And

on the whole, the legislators appear to be more conservatively inclined this year than then. Governor Herbert B. Maw, in his message, advised against increasing burdens on industry and recommended that favorable consideration be given to legislation designed to encourage processing of raw materials in the state. He urged, however, a two-cent increase in the gasoline tax to finance an expanded program of highway construction.

Two bills are pending to provide lifetime industrial compensation grants in total disability cases. The existing Utah law provides payments for six years. Under the proposed bills the payments would con-

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tinue at a reduced rate after the sixth year.

On the labor side, a serious drive to make extensive revisions in the state laws is under way for the first time since organized labor got into the legislative saddle back in the early thirties. One proposed bill would repeal the entire Utah labor relations act (a copy of the national labor relations act) and substitute therefore the Wisconsin act. Another bill would amend the existing law by writing in a list of unfair labor practices on the part of employees or their representatives. Both measures would outlaw the secondary boycott, prohibit mass picketing or any type of picketing unless a majority of the workers in the bargaining unit involved had voted for a strike in a secret ballot.

Another measure has been introduced to submit the closed shop issue to the electorate in the 1948 election in the form of a constitutional amendment to outlaw closed or union shop contracts.

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#### **Unions Will Fight**

The labor organizations have formed a joint committee to fight the measures straight down the line.

Groups chiefly interested in amending the labor laws, planned originally to concentrate all their effort on a simple bill to ban the secondary boycott. But legislators, sensing a turn in public attitudes, began jumping in with much broader programs. The question now is whether the forces seeking a "balancing up" in labor legislation aren't getting over-extended to a point where they might lose the secondary boycott objective.

A subject of legislative and public controversy is the five-year-old state department of publicity and industrial development. The department has undoubtedly made some worthwhile contributions to the area's industrial development, one notable example being its part in the fight to get freight rate reductions for the Geneva steel plant. But the thing that projects it into a feuding arena is the manner in which it is financed. It receives slop-over revenues from the motor vehicle license fund and is therefore not under legislative control either as to budget or spending. The high-way people scream "diversion of road funds." Private industry is apprehensive about its excursions into industrial projects. Politicians regard it as a campaign organization for whoever happens to be the incumbent governor.

Some groups would like to wipe it out entirely. But its less emotional enemies incline to the view that it should be retained under a different setup. They want it financed from direct legislative appropriations and subjected to legislative will as to the projects and activities it may undertake. The battle will likely be an "as is" versus new setup affair rather than a drive to abolish it entirely.

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# LABOR and the INDUSTRIAL WEST

### How Management and Labor Can Get Along

Schwellenbach will head the roster of speakers who will address the labor-management conference, sponsored by the Institute of Industrial Relations, set for March 19-21 on both Berkeley and Los Angeles campuses of the University of California.

Schwellenbach's address will climax two days of discussion of labor problems by such authorities as Donald M. Nelson and William H. Davis, both former chairmen of the War Labor Board; Paul H. Douglas, professor of industrial relations at the University of Chicago; William M. Leiserson, visiting professor at Johns Hopkins University; and Donald Richberg, coauthor of the National Labor Relations Act.

The conference will open at Berkeley on the evening of the 19th when Richberg and Nelson will share the platform to discuss "Industrial Disputes and the Public Interest." On the evening of the 20th they will present their discussion in Los Angeles.

Prof. Leiserson will open the second day of the conference (the 20th in Berkeley, the 21st in Los Angeles) with a discussion in the morning of "Free Collective Bargaining of a Rule of Law." He will bring to the discussion his wide experience as a former member of the National Labor Relations Board

The afternoon session will deal with "Collective Bargaining and Economic Progress," discussed in addresses by Davis and Professor Douglas. In addition to his

work at the University of Chicago, Professor Douglas has written several books on this subject.

Schwellenbach's address will conclude the conference program with a continuation of the subject "Industrial Disputes and the Public Interest," discussed earlier by Richberg and Nelson.

Though the Secretary is definitely planning to speak at the conference his presence on the coast is subject to cancellation by Congress, should he be required to appear at that time before committees drafting current labor legislation.

Nelson is now the president of the Society of Independent Motion Picture Producers, and during the war was one of President Roosevelt's close advisors. Richberg was a member of the National Recovery Administration Board in the early days of the New Deal, and was co-author of the Railway Labor Act of 1926.

When the conference was first planned it was hoped that representatives of labor could be found to take part in round table discussions as well, but the institute chairman was unable to obtain commitments.

The Institute of Industrial Relations is sponsoring the conference as part of the University's charter week celebration.

University President Robert G. Sproul will preside at the conference opening in Berkeley.

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#### Hook and Dillon Win Before NLRB

One of the Bay Area's stormiest postwar jurisdictional struggles entered a new round when the National Labor Relations Board ordered elections held by March 14 to determine whether the International Association of Machinists or the CIO Steelworkers of Hook and Dillon should represent the machinists in 93 San Francisco shops,

The ruling came as a victory for Hook and Dillon, who had petitioned for elections at the time of the affiliation of their Machinists' Union, Independent, with the CIO Steelworkers. The petition was opposed by the IAM, from which the independent had seceded after their prolonged strike which ended just a year ago.

The NLRB ruled, in ordering the elections, that regardless of whether the independent was a legitimate union before it affiliated with the Steelworkers, the Steelworkers' union itself was "unquestionably a labor organization." Furthermore, the board held that as the IAM contracts with employers were due to come up for renegotiation on March 31, the present contracts would be no bar to holding elections. As to the independent's "showings of interest," the board held, "we are satisfied that they are adequate."

The elections were ordered in two similar decisions, one affecting the California

Metal Trades Association, which represents 84 shops, the Ace Manufacturing and Supply Company, and the Belmont Engineering Company. The other decision affects the five shops of the California State Brewers Institute and two other independent shops.

The decisions represent some interesting side-stepping by the NLRB. A major contention of the IAM had been that the independents were not a legitimate labor organization before affiliation, as they had been ousted by the International. According to the board's ruling, that contention was irrelevant, as its affiliation with the CIO automatically made it a legitimate union, regardless of its previous status.

Another contention of the IAM and the employers was that the present IAM contracts would bar the holding of elections. Had the NLRB decisions come at any earlier time, the contracts in effect might easily have prevented the ordering of elections, but the decisions were handed down just a few weeks before the contracts were to expire, and therefore it was deemed "timely" to hold elections before any new agreements were signed.

Still pending before the Board are similar cases involving the marine industry.

#### Canners Seeking Union Responsibility

Demanding that union leaders be held legally responsible for any wildcat strikes

or other illegal work stoppages or slow-downs, the California Processors and Growers, bargaining agents for 64 California canneries, opened negotiations for a new contract with the AFL cannery workers, while last season's jurisdictional warfare remained unsettled.

The operators' problem is to get the union to accept responsibility for work stoppages without a closed shop contract, which the NLRB has ruled it cannot negotiate with any union at this time. The board has yet to decide the outcome of the collective bargaining election held last August between the AFL and the CIO Food, Tobacco & Agricultural Workers.

Since last season's conflict both unions have been jockeying for position. The CIO has multiplied its organizational efforts, and has pressed for recognition by the NLRB as bargaining agent in a number of independent plants outside the C. P. & G. The NLRB has made strenuous efforts to enforce its ruling that neither union can make closed shop agreements until the election has been determined; and the AFL leaders, while preparing to sign new agreements with the operators, have charged the NLRB with favoritism towards the CIO.

Meanwhile the operators watch the approach of the season when perishable crops will be delivered to the canneries. Their present contracts expire March 1.



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#### Your Metals Congress

(Continued from page 58)

president, will speak on "The Future of Welding in the West."

Don M. Follett, manager of the Alameda County New Industries Department of the Oakland Chamber of Commerce, will speak on "The Future for Industry in the West," at a March 24 luncheon of the American Foundrymen's Association.

Chairmen and co-chairmen of programs for the American Foundrymen's Association are:

Richard Vosbrink, pres. of Berkeley Pattern Works, and pres. of Northern California chapter AFA; Leon Cameto, Production Foundry Co., Oakland, and James Lynch Jr., Lynch Brass & Aluminum Foundry, Oakland. Fred A. Mainzer, Pacific Brass Foundry, San Francisco, and Herbert E. Eggerts, Berkeley Brass Foundry, Berkeley; Harry Bossi, Macaulay Foundry, Berkeley, and Hugh Prior, Enterprise Engine & Foundry Co., South San Francisco; Norman E. Schlegel, Vulcan Foundry Company, Oaklnd, and George Stewart, Pacific Brass Foundry Co., San Francisco;

Ray A. Wilson, Pacific Steel Castings Co., Berkeley, and John A. Watson, General Metals Corp., Oakland; Robert Gregg, Reliance Regulator, Alhambra, and A. M. Ondreyco, Vulcan Foundry Co., Oakland; Ed M. Welch, American Manganese Steel, Oakland, and Charles Hoen Jr., Enterprise Engine & Foundry Co.; R. A. Johnson, General Metals Corp., Oakland, and T. E. Caldwell, Columbia Steel Co., Pittsburg, Calif.

Chairmen of programs of the American Welding Society are:

Mark Haines, San Francisco Chapter, AWS, Santa Rosa, Calif., and T. S. Sholes, Spokane Chapter, AWS, Spokane, Wash.; Charles Smith, Linde Air Products Co.; Mark Cassimus, San Francisco, and T. E. Piper, Northrop Aircraft, Inc., Hawthorne, Calif.; Elmer Gunette, Tacoma Section AWS, Tacoma, Wash., and Ray Gann, Rheem Mfg. Co., Stockton, Calif.;

Calit.;
David Bisbee, Los Angeles Section, AWS, San Gabriel, Calif., and Charles Smith, Linde Air Products, San Francisco; Paul Kullberg, Portland Section, AWS, Portland, Ore., and Prof. G. S. Schaller, Puget Sound Section, AWS, Seattle, Wash.; and L. P. Henderson, Lincoln Co., Emeryville, Calif., and Walter Danton, Welding Supervisor, San Francisco Naval Dry Docks.

Some 16 Western divisions of technical societies are actively co-operating in the program and other activities of the congress and exposition. Besides the three mentioned previously, the list includes:

American Chemical Society, American Industrial Radium and X-Ray Society, American Institute of Mining and Metallurgical Engineers, American Institute of Electrical Engineers, American Society for Testing Materials, American Society of Tool Engineers, Inc., Mining Association of California, Northwest Electric Light & Power Association, Pacific Coast Electric Association, Purchasing Agents' Association of California, Inc., Society of Automotive Engineers, Western Oil & Gas Association, and the American Petroleum Institute.



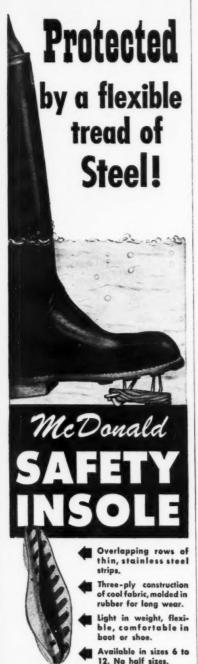
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#### More on the Unemployment Picture

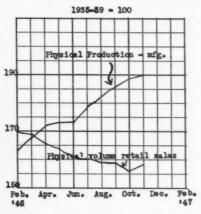
(Continued from page 37)

may be postponed. Continuing a negative trend, the volume of building permits in Western cities in December was reported to be substantially less than a year earlier. There are some indications that the decline is continuing in January. However, overall regional employment throughout the calendar year of 1947 is still dependent on the state of national economic activities; hence (see below) employment in the latter part of 1947 should be no higher and will probably be lower than in the comparable months in 1946.

The economic outlook still appears cloudy for the short term—i.e., for 1947—in spite of the late January spurt in some indices. The best indication of gathering difficulties may be a comparison of the

trends pictured below.

Seasonally adjusted and smoothed trends



(Source: Dept. of Commerce, Survey of Current Business)

From the peak in February, 1946, retail sales adjusted for seasonal and price changes (hence representing the physical volume of purchases), started downward and now appears to be much lower than normal in relation to the physical volume of manufacturing. (From fragmentary information, it appears that, in November, this decline was somewhat more severe in the Western states than for the whole country.)

Few will dispute that these trends must soon converge. In view of the recent declines in "real" earnings, the rapid increase in consumer credit, etc., it is very doubtful that total dollar retail sales will increase materially; the adjustments, therefore, must come in prices and/or production. And a price adjustment of the extent needed would almost inevitably cause a significant production (and employment) adjustment. The divergence between these two trends also makes clear, incidentally, that the growth of inventory over the past year has been due to something more than price increases as some inferred.





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# THE WEST ON ITS WAY

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#### ARIZONA

POWER EQUIPMENT TO BE TESTED—International Harvester Co. has leased 1,920 acres of state land 23 miles south of Phoenix, for testing industrial power equipment.

DEALERS TO BE ESTABLISHED AT AIRPORTS—Pacific Airmotive Corporation has bought the parts and supply division of Marsh Aviation Co. at Phoenix, and will establish dealers at all important Arizona airports. Marsh Aviation retains its crop dusting service, sales agencies and flight school.

MORE TOMATO PACKING—Mexican Produce Co., Nogales, Arizona, is operating a new tomato packing plant. One hundred persons are employed.

BORDEN REMODELING STARTED—As part of the Borden Company's \$26,000,000 expansion program, the plant at Phoenix is being remodeled. . . .

#### CALIFORNIA

NEW PARTNERSHIP FORMED—Pacific Pipeline Construction Co. and Engineers, Ltd., have formed a partnership for conducting a general pipeline construction business under the name Pacific Pipeline & Engineers, Ltd. The new partnership brings together all of the facilities of two leading pipeline constructors in the West and enables the company to expand its operations to serve the oil and gas industry to the fullest extent. . . .

STEEL EXPANSION UNDERWAY—In Los Angeles, Bethlehem Pacific Coast Steel Corporation's \$10,000,000 plant expansion program is under way for the new blooming mill. Ultimate expansion at this plant will more than double its present capacity of 117,000 tons of ingots per year. A new 24-inch structural mill has been planned and a high speed bar and rod mill and new steel making furnace will be installed this year.

DIESEL ADVANCEMENT—Southern Pacific has put 20 of the new post-war 6,000 hp. diesels to freight use which were formerly confined wholly to switcher work and transcontinental streamliners. Santa Fe will soon have about 260 big road diesels, both passenger and freight. The Barstow, Calif., engine yard has become the biggest railroad diesel engine service and maintenance station in the country, handling all maintenance work on the units of Santa Fe's fleet operating in the Far West, which means a majority of its diesels....

NEW SAN JOSE PLANT—CPA has approved construction of Food Machinery Corporation's new \$895,000 plant to house the Bean-Cutler Division at San Jose. The building will have a floor space of 200,000 square feet and contain the latest modern equipment. This new plant will take care of the expanding business of agricultural equipment, sprayers, dusters, fresh fruit packing equipment and new fire fighting equipment. V. H. Matthew is manager of the division and vice-president of the corporation. . . .

LATEST CPA APPROVALS FOR NORTHERN CALIFORNIA ARE—Pacific Tel. & Tel., Modesto, addition to telephone exchange, \$170,000...E. I. DuPont d'Nemours, South San Francisco, for paint factory, \$116,970... Yuba City Walnut Assn., Yuba City, walnut processing, \$135,000... Pacific Tel. & Tel., Fresno, telephone exchange, \$560,000... Standard Oil Co., Richmond, motor transport facilities, \$108,000... Kelseyville Packing Co., Kelseyville, fruit packing house, \$72,800... Made-Rite Sausage Co., Sacramento, sausage factory, \$100,000...

NEW OAKLAND ENTERPRISES INCLUDE—Thomas D. Stevenson & Sons, a metal awning and venetian blind plant in Berkeley. . . . Airways Training, Inc., a Nevada corporation with a \$1,000,000 capital investment locating at Oakland airport in 10,000 square feet of space. . . . E. E. Richter & Son, distributors of air-cooled industrial and agricultural engines, building Emeryville plant. . . Knowlton-Tucker Candies, Inc., establishing a \$75,000 wholesale and manufacturing candy business. . . . Gray Manufacturing Co., establishing a new Oakland plant to manufacture truck bodies. . . . J. W. Ferguson, constructing a new plant to make industrial scales. . . . Specialty Sales Corp., establishing a new Alameda home appliance distributing busi-

ness.... The Du-Arc Corp., establishing a new enterprise to manufacture electric arc torches.... Albert K. Whitton, constructing a new assembly line auto laundry....

NASH TO START CAR PRODUCTION—Nash-Kelvinator Corp.'s \$1,600,000 assembly plant in El Segundo, Calif., will begin operations 500n, barring repetitions of material shortages and suppliers' strikes which have delayed preparations of the plant. Early operations will involve only assembly of Nash passenger cars for Western area distribution, but assembly of trucks and commercial cars is planned later. R. A. Devlieg is vice-president in charge of manufacturing.

WAA APPROVES PLANT SALE—Sale of a marine engine plant at 99th and Parker streets, Berkeley, Calif., to the Production Engineering Co., Berkeley, for \$88,500 cash has been approved by WAA. The plant which cost the government \$145,354, was leased and operated during the war by the Goldfield Consolidated Mines Co., an assignee of the Joshua Hendy Iron Works.

LOGGING FIRM HAS NEW MILL—Construction of a new sawmill by the Susanville Logging Co., owned by Sam Dotson, W. B. Barbee and Sherman Rea, is now underway on a 14-acre plot two miles east of Susanville on the Susanville-Reno highway. The new mill is scheduled to be operating by April.

POPE & TALBOT MOVE—New, consolidated offices and headquarters of Pope & Talbot, Inc., pioneer West Coast shipping and lumber firm, have been occupied at 320 California Street, San Francisco 4.

MUTUAL TO BUILD STUDIOS ON COAST—Mutual Broadcasting System will build radio and television studios in Hollywood costing \$2,500,000. The new installations will provide about 112,000 square feet of space for all phases of Pacific Coast radio operations. A \$250,000 master control panel will include facilities for amplitude modulation (AM) and frequency modulation (FM) radio, and for television.

CPA APPROVALS FOR SOUTHERN CALIFORNIA INCLUDE—Culver City, Ashburn Supply Co., Los Angeles, a plant at 8468 Warner Drive, for increased production of critical heating ducts, fittings, ventilating equipment, and for distribution of air furnaces, \$60,000. . . La Habra, Standard Oil Co. of Calif. . . . demolition of old deteriorated building and reusing materials to construct proper facilities for the storage of motor equipment and their repair at Murphy-Coyote Headquarters Camp, \$60,000. . . . South Gate, Kern Food Products, Inc., 2849 E. Pico Blvd., Los Angeles, a fruit and tomato canning and processing plant at Salt Lake Ave. and Santa Ana St., \$135,000, to increase the production of food.

BECHTEL McCONE NOW BECHTEL CORP. — Bechtel Brothers McCone Co., San Francisco, engineering and construction organization, has changed its name to Bechtel Corp., Compania Bechtel, S. A., and International Bechtel, Inc. S. D. Bechtel is president and W. E. Waste, Van W. Rosendahl, J. Perry Yates, V. G. Hindmarsh, Jerome K. Doolan and C. Stribling Snodgrass, vice-presidents.

FACTORY BUILDING ADDED . . . Marchant Calculating Machine Co. doubled its factory personnel and added \$500,000 in plant and equipment during 1946. The company's major addition was a factory building at 67th Street, Oakland, which more than doubled factory production potential. The factory, built for the Navy during the war, now houses assembly, inspection and shipping departments.

McCULLOCH MOTORS CORP. BEGINS PRODUCTION—Gasoline engines are now rolling off the assembly line at the new \$1,600,000 plant of the McCulloch Motors Corp. in Los Angeles, a structure covering 75,000 sq. ft. completed late in December, less than a year after



construction began. When the planned capacity of one engine a minute is reached, employment of 1,000 workers is expected. Current operations are turning out four specially designed models of gasoline engines for industrial use, and a model designed specifically for target aircraft use. In development are new aviation and marine gasoline engines, Pres. Robert P. McCulloch chose Los Angeles for his opening round in the mass production of small engines after three years in the Easth at the head of McCulloch Aviation, Inc., makers of highly specialized engines for Army and Navy use.



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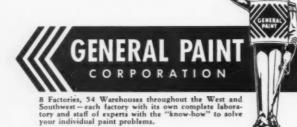
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and warehouse, staffed by veteran paint men, in every major industrial center in the West and Southwest. These paint veterans are familiar with and know what to do on all types of paint problems. They know because General Paint has been applying its specialized industrial "know-how" to the solving of difficult paint problems ever since 1865. We can help you, too. Call your nearest General Paint office (it's listed in the telephone directory)—tell us what your painting headache is.



#### THE WEST ON ITS WAY

STAUFFER CHEMICAL EXPANSION PLANS—Some \$300,000 in construction for the Stauffer Chemical Company is under way. This work includes a \$70,000 one-story storage warehouse for sulphur products for the San Francisco Sulphur Company, a Stauffer subsidiary, now nearing completion. Also under way is a \$90,000 superphosphate processing mill at the Stauffer plant in Richmond. In addition, plans are being brought to completion for a \$60,000 one-story agricultural laboratory in Los Altos and a \$70,000 warehouse in Portland, Ore.

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NEW INDUSTRIES IN LOS ANGELES AREA ARE - Western Metals Spinning & Mfg. Co., 2527 San Fernando Rd., is making sheet metal hollowware. . . . Stendahl Chocolates, 710 S. Victory Blvd., Burbank, is making candy in its new building. Earl Stendahl is president. . . Pim Products, 5240 San Fernando Rd., Glendale, has begun production of automotive timing gears, electric clock gears, and other machine shop items. B. A. Tilton is the owner. . . . Security Safe Co., 6141/2 No. San Vicente Blvd., is making floor safes for industrial and residential use. . . . General Brewing Corp., 465 W. Los Feliz Blvd., Glendale, is having plans drawn for a "Lucky Lager" plant in Los Angeles, between Atlantic Blvd. and Eastern Avenue, south of Washington Blvd. Cost is estimated in the neighborhood of \$2,000,000. . . . California Air Products Co., Inc., a subsidiary of Burdett Oxygen Co., Cleveland, Ohio, has established local manufacturing operations at 2014 Belgrave Ave., Huntington Park, for production of oxygen, and a plant at Los Nietos for manufacture of acetylene gas. Total investment will be approximately \$300,000. . . . Southern California Brick & Clay Products, Inc., offices at 3700 Broadway Pl., has acquired 72 acres on Telegraph Road, Castaic, and is planning the first unit of 7,500 sq. ft. in which to produce common brick. Production of between 15,000 and 18,000 brick per day is anticipated. Reuben Podolor is president of the company.... Electroweld Steel Corp., Oil City, Pa., is condent of the company. . . Electroweld Steel Corp., Oil City, Pa., is constructing a plant at 505 West Footbill Blvd., Azusa, in which to make steel tubing within a range of sizes from \%" to 3". President of the company is John S. Crowl. . . . Purofied Down Products Corp., New York, has established a branch plant in a recently constructed building at 2815 Winona Ave., Burbank. Company makes cushions for the furniture trade, sleeping pillows, and comforters, as well as processes down and feathers. . . . Western Engineering & Equipment Co., 5699 down and feathers. . . . Western Engineering & Equipment Co., 5699
District Blvd., has begun manufacture of feed and flour mill machinery
and equipment. . . Modern Shoe Mfg. Co., Philadelphia, manufacand equipment. . . . Modern Shoe Mrg. Co., Philadelphia, manufacturer of women's shoes, will establish a branch at 615 W. Colorado Blvd., Glendale. Samuel Over is the owner. . . . Van Nuys Coach Corp., 14122 Aetna St., Van Nuys, will manufacture house trailers. Capacity of plant will be 15 to 25 trailers per week. Cletus J. Dietrich is president. . . . Pants, Inc., 5060 W. Jefferson Blvd., has begun manufacture of men's slacks. Miles Ark is the owner. . . . Thacker-Harris Co. 2521 Randolph St. Hustington Park, has begun produc Harris Co., 2521 Randolph St., Huntington Park, has begun production of corrugated shipping containers. . . . Myers Machine Works, 1806 E. 55th St., has started manufacture of piston pins for the automobile industry. M. B. Myers is the owner. . . . Behabry Plastics Corp., 705 W. Garvey Blvd., El Monte, is making small plastic boats and toboggans. W. I. Beach is president. . . . La Deau Mig. Co., 3702 San Fernando Rd., has begun manufacture of continuous hinges, as well as doing tool and die work. L. D. Greene is the owner. . . . George H. Brown & Son, 1801 S. Olive St., will shortly be making women's and children's sportswear such as slacks, slack suits, blouses, skirts, and robes, in a new all-glass building at the above address.

TWO OLD WESTERN PAINT FIRMS IN PARTIAL MERGER—Establishment of the new Fuller-Nason Industrial Division of W. P. Fuller & Co., combining the specialized industrial finishes departments of two pioneer Western paint companies, has been completed. The new division will bring together the industrial finishes section of W. P. Fuller & Co. and R. N. Nason & Co. Construction of a \$1,000,000 plant designed to provide modern production, control and research



facilities for all the many types of specialized industrial finishes has been started at Fuller's South San Francisco factory. President D. J. Tight of R. N. Nason & Co. enters the Fuller organization as industrial advisor. W. W. Holt, for many years a co-worker with Tight in direction of R. N. Nason & Co., succeeds him as president of the Nason organization. In charge of the production end of the new Fuller-Nason Industrial Division is W. P. F. Brawner, director of production for W. P. Fuller & Co.

PG&E PLANS EXPANSION PROGRAM—The Pacific Gas & Electric Company plans to spend \$300,000,000 in a five-year expansion program. The company has applied to the Federal Power Commission for a license to build two new powerhouses on the Feather River as part of its construction plans. The program will add approximately 1,000,000 horsepower to PG&E's power capacity and will bring the total by the end of 1951 to over 3,500,000 horsepower.

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FURTHER EXPANSION BY GOODYEAR—Goodyear Tire & Rubber Co. will install equipment at its mechanical and molded goods products plant in Los Angeles for production of automobile floor mats and will also make small-type tires for toys, lawn-mowers and industrial vehicles. Floor space used during the war for large-scale output of airplane fuel tanks will be utilized for manufacturing new products.

of airplane fuel tanks will be utilized for manufacturing new products.

AMONG SOUTHERN CALIFORNIA EXPANSIONS—Moore Business Forms, Inc., 620 E. Slauson Ave., has begun construction of an 11,400 sq. ft. addition to increase production. . . . Cox Air Gauge System, 2207 So. Main St., has moved to its new building where about 10,000 sq. ft. are utilized in manufacture of air gauges and hose assemblies for the petroleum industry, gasoline stations, etc. . . . Malo-Maid Mfg. Co., formerly at 407 E. Pico Blvd., is constructing the first unit of a new plant at 99 San Jose St., Burbank. Building will eventually contain 10,000 sq. ft. for manufacture of women's sportswear. . . . Industrial Research Laboratories, 961 E. Slauson Ave., has moved into a new building where about 10,000 sq. ft. are utilized in manufacture of oil well pump equipment, liners, rolls, and bushings for rubber and plastic machinery. . . . Interchemical Corp., 1366 Willow St., has under construction an 8,000 sq. ft. warehouse. Company makes interior and exterior paints, varnishes, and enamels. . . . . Consolidated Rock Products Co., headquarters at 2730 So. Alameda, is constructing a 7,500 sq. ft. building at 2002 W. Slauson Ave., in which to process concrete. . . . Royal Trailer Co., 2984 Allesandro St., has purchased two lots and a building and is constructing an addition to bring total manufacturing space to 7,500 sq. ft. Company makes coach trailers. . . . . Kimport Bedding Co., 1740 W. 59th St., has moved to this location where 7,000 sq. ft. are utilized in manufacture of mattresses, box springs, and crib mattresses. . . . Excelo Mfg. Co., 1107 So. Fremont Ave., Alhambra, is now located at this address where 6,800 sq. ft. of floor area are available for manufacture of automotive chemicals . . . . Vogue Sportswear, 1154 Santee St., has moved to this location where 6,600 sq. ft. are utilized for manufacture of automotive chemicals . . . . Vogue Sportswear, 1154 Santee St., has moved to this location where 6,600 sq. ft. are utilized . . . . Nork P

MORE LOS ANGELES EXPANSIONS—Lady's Choice Foods, 4578 Worth St., will construct a 25,000 sq. ft. addition and install new equipment for production of jams, jellies, pickles, dressings, etc. . . . Quaker Oats Co., 1542 Calada St., will build a one-story addition to contain 19,500 sq. ft. to be used for expansion of the Poultry Feed Division. . . . Essick Mfg. Co., 1950 So. Santa Fe Ave., will add 18,000 sq. ft. to production and warehouse facilities. Company makes construction machinery . . . . Howard Shirt Co., 714 S. Hill St., manufacturer of men's sport shirts, has leased 18,000 sq. ft. at 937 E. Pico Blvd., and is installing new machinery to greatly expand manufacturing operations. . . Jordan Sash & Door Co., 6561 S. Western Ave., will shortly move to its new building at 6121 S. Manhattan Pl. 16,000 sq. ft. will be available for sash and door manufacture. . . . Dan Gertsman California, manufacturers of women's sportswear, with headquarters at 722 S. Los Angeles St., has opened a branch plant at 2202 Broadway, Santa Monica. The new branch contains 15,000 sq. ft. of floor area and is under the name of Cal-ette of California, specializing in manufacture of sportswear for juniors. . . Motorite Co., Inc., 2847 E. 11th St., is having plans drawn for the first unit of a new plant at 7038 E. Anaheim-Telegraph Rd., to contain about 15,000 sq. ft. Ultimately plant will be increased to twice that size. Company makes fractional horsepower electric motors. . . . Albert Sheetz Mission Candy Co., 5755 Santa Monica Blvd., is constructing a 15,000 sq. ft. addition to expand manufacturing facilities. . . . Transmission Exchange Co., 1246 S. Flower St., has a building under copstruction at 3434 S. Grand Ave., to which location it will move about the first of the year. New building will afford 15,000 sq. ft. of floor area for manufacture of automobile transmissions. . . Paul Henry Co., 2037 So. La Cienega Blvd., is having plans drawn for a 14,800 sq. ft. plant at 11851 W. Olympic Blvd., West Los Angeles, for manufacture of ther

NEW GLASS FIBER PRODUCTS DIVISION—A new division to be known as Glass Fiber Products has been formed by White & Holcombe, San Francisco firm. This division will be engaged in the manufacture



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of various industrial, marine and consumer applications of Owens-Corning Fiberglas. G. B. Holcombe is general manager.

LOS GATOS GETS TRAILER COMPANY—Production has started at a new trailer assembly plant in Los Gatos which will give year-around employment to 50 to 75 workers. The plant—in the old Hunt Bros. cannery—will be operated by Great Western Corp. and will assemble about 900 trailers a year.

COPPER DEPOSIT OPTION REPORTED — Rehabilitation of the Afterthought mine 30 miles northeasterly from Redding has been progressing several months under supervision of Littleton Price. A comprehensive diamond-drilling program was recently started. It is reported to be now under lease and option to Coronado Copper Company.

PACIFIC LINE ADDS CHARTERED SHIPS—Pacific Transport Lines, Inc., of San Francisco, has added two more chartered freighters to its fleet, making a total of 10 ships in operation by the trans-Pacific line. The two new vessels, the Liberty-type Ferdinand S. Silcox and Joseph R. Lamar, will be used on Army contract work in the Pacific.

FIFTY-KW FM STATION — Federal Communications Commission has approved the erection of a 50-kw FM transmitter at the San Bruno, California, plant of Eitel-McCullough, Inc. The modulator is of the Armstrong dual-channel type and manufactured by REL while all other gear was manufactured in the laboratories of Eitel-McCullough. Later in the year the transmitter will be moved to the top of Mount Diablo from which a service area including more than three million people will be covered. . . .

NEW SODA ASH PLANT—Henry J. Kaiser Co. has begun construction of a Soda Ash Production Plant in the Owens Valley, Inyo County, California. . . .

#### COLORADO

C.F.&I. TO OPEN DENVER CHEMICAL PLANT—The Colorado Fuel & Iron Corporation, the state's largest industrial firm, has signed a long-term lease with the War Department for a portion of the chemical manufacturing facilities of the Rocky Mountain arsenal, located northeast of the Denver City limits. A chemical industry to serve the growing West will be established at the plant. Units involved in the lease, which is understood to be for a 15-year term, are the chlorine, thionyl chloride and chloriated paraffin plants, a portion of the chemical storage and warehouse section, and other accessory operations.

CHEESE-MAKING NEW INDUSTRY IN SOUTHERN COLORADO—Production of Italian-type cheese is bringing a new industry to Trinidad. Large scale production began as recently as 1941 and now totals 696,000 pounds a year. The cheeses go to 34 states and eventually the manufacturers hope to serve the entire nation.

WORTHINGTON PUMP BUYS CORPORATION — Worthington Pump has invested \$200,000 in Denver's promising industrial future. It acquired at private trustee sale the going and well-tooled Hauselmann Engineering Corp. at 4751 Broadway. This gives Worthington a regional branch fabrication unit (pump parts) to add to its local office, assembly and warehouse operations.

#### IDAHO

PLANT UNIT ORDERED—Northern Idaho Frosted Foods, Inc., will construct a processing plant at Fifth and Railroad in Lewiston. C. W. Hein, with Kirk McGregor and Guy Storey, will manage the plant. It will be a co-packing unit of Standard Brands which has its head-quarters at New York City.

LARGE DAIRY PLANT PLANNED—Plans for the establishment of the "largest modern dairy plant in Idaho" have been completed by Alton J. Young, owner of Young's dairy, Twin Falls.

#### MONTANA

LEVELING TO START ON BILLINGS OIL PLANT—Leveling of ground for construction of a large oil refinery east of Billings has been started by Carter Oil Co. Work on the \$8,000,000 plant was expected to be under way by next spring. The plant will have a capacity

of 18,000 barrels of crude oil daily and will produce 9,400 barrels of automotive fuels daily.

POLE TREATING PLANT TO OPEN—E. E. Drury & Sons new pole treating plant which has been under construction since last March, has begun operations at Troy on a commercial basis. It has a capacity of six cars of treated poles daily but will not run to full capacity until some time next spring. A second peeling machine is being installed and there has been quite a flow of poles coming from outside points, notably from Canada.

GREAT NORTHERN MINE PROPERTY UP FOR SALE—The Great Northern Railway Co. has called for bids on its mining properties at Giffen, Stockett and Sand Coulee in Cascade County and mineral rights in Judith Basin County. The railway plans to sell mining equipment, supplies, machinery and buildings on the mining properties as well as 35,000 acres of land.

MONTANA PLANT PLANNED—A new plant, to process lumber for housing, is to be set up in Thompson Falls by Winfield E. Miller and Julius Erlby. A site has been leased from Charles Pyatt. The factory buildings are under construction and several carloads of machinery have arrived.

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NEW FIRM INCORPORATED—The new Carson concern to be known as Armstrong Industries, Inc., will manufacture food mixers, parts and appliances—electric or any other type. Incorporators and members of the board of directors are G. V. Lamb, K. Hedlund and A. M. Brady.

ANACONDA WORKS ELKO PROPERTY—The Anaconda Copper Mining Co. is conducting a development program at its Victoria copper lease, located in Elko county. The main object is to determine if there is enough substantial ore in the property to warrant a large expenditure.

THE 140-MILLION BMI PLANT NOW SURPLUS—The gigantic \$140,000,000 Basic Magnesium plant and the adjacent townsite of Henderson was turned over February 1 to the War Assets Administration by the Reconstruction Finance Corporation. Nine private firms ranging from gem cutting to chemical plants now occupy portions of the 7,000-acre plant, located between Las Vegas and Boulder City.

T&G GETS PERMIT TO ABANDON ROAD — Permission was granted the Tonopah and Goldfield Railroad by the ICC to abandon its entire 88-mile line between Goldfield and Tonopah Junction and the firm was also authorized to cease operations, under trackage rights, over the Southern Pacific railroad line from Tonopah Junction to Mina. Acting under permission granted it by the ICC, officials of the Nevada Copper Belt Railway Co. will terminate operations on entire line between Hudson and Wabuska in Lyon county on March 24.

LADY ESTHER BUYS TALC PROPERTY—The group of talc claims at Talcton, known as the Nevada Minerals, will hereafter be known as the Lady Esther property as the claims are owned by that concern. Frank Wicks of Los Angeles is the manager, Dwight Mateer is assistant manager and Jim Kerns is superintendent of work and construction.

FERTILIZER CO. IS INCORPORATED—Incorporation papers were filed in Carson by the Pacific Fertilizer Co., Inc. Mailing address is the post office at Pyramid Lake. The company will establish a \$100,000 industry in Nevada, dealing in the manufacture of fertilizer and chemical manufacturing. Directors are A. D. Erickson of Berkeley, Calif., C. R. Burkhart and Francis V. Burkhart, both of Reno. Other incorporators are Louis V. Rezzone of Reno and Von T. Ellsworth, Berkeley.

WILL NOT JUNK GABBS PLANT—WAA has received bids for the lease and eventual purchase of the Gabbs plant for operation and therefore no part of the plant will be junked. The lessees or purchasers will have to operate the plant for not less than three years. . . .

GOLD MINING IN NEVADA GAINING—Revival of gold mining in the Awakening, Golconda, Potosi, Winnemucca and other mineral areas of Northern Nevada is expected. The great Getchell property in the Potosi district is scheduled to be operated at capacity as soon as sufficient labor can be obtained. Capacity of the reduction plant has been raised from 1,000 to 1,500 tons of ore daily. In the Awakening district El Dorado Gold Mines is preparing to install a mill on its Alabama property, where a vigorous development program is progressing. At the nearby Jumbo the Austin interests of Reno are building a reduction plant designed to treat 500 tons of ore daily.

SCHEELITE MILL REBUILT—Reduced operations at the mine and mill of the Nevada Scheelite Mining Co., southeast of Rawhide, are temporary, and plans are going ahead for future production of concentrate on a larger scale than before. Development work at the mine was suspended the middle of December and only a small crew was left at the mill, where heavy machinery is being moved and installed on foundations which had previously been built.





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#### THE WEST ON ITS WAY

#### **NEW MEXICO**

NEW FOUNDRY STARTING—Associated Manufacturing and Foundry Co. will soon break ground in Albuquerque on a \$500,000 foundry which is ultimately expected to employ 300 to 350 local workers. Farm implements, irrigation valves and gates, plumbing fixtures and soil pipe are among items which will be manufactured. George H. Wood, president; Richard M. Krannawitter, vice-president; and O. M. J. Roessel, secretary, are officers of the concern.

#### **OREGON**

NEW COMPANY TO CUT TIMBER—KOGAP Lumber Industries, recently organized firm, has purchased 49,000,000 feet of timber in the Abbott-McCall creek area near Prospect. Logging will extend over a three-year period, with a permitted cut of slightly over 16,000,000 feet annually. Officers of the firm are R. C. Housel, president; S. V. McQueen, executive vice-president; A. A. Lausmann, secretary-treasurer, and Wallace Ragsdale, supervisor of logging and timber management.

FPC APPROVES POWER MERGER—Proposed merger of the Northwestern Electric Company and the Pacific Power & Light Company in Portland has been approved by the Federal Power Commission in Washington, D. C., one of the several steps which must be taken before the consolidation of electric facilities can become effective. There are three more steps to be taken before any move toward the merger can be undertaken. Approval also must be given by the securities and exchange commission, and by the public utility departments of the two states. After that, the stockholders must approve the proposal and the plans for refinancing.

ALCOHOL PLANT WINS INTEREST—The approaching shake-down runs at the government's experimental plant to make alcohol from wood waste at Springfield are attracting much national interest. The plant, constructed during the war, is designed to make use of part of the estimated 70 per cent of the log that goes to waste when timber is cut.

NEW ASPHALT REFINERY TO OPEN—California Asphalt Corp. (Standard Oil Co. of California subsidiary) is preparing to put its new asphalt refinery at Willbridge, Ore., on the Columbia River, into operation following test runs. The plant, which is expected to turn out from 4,000 to 5,000 barrels a day, is to be served with heavy crude oil by tankers from Estero Bay, Calif.

REPAIRS DUE ON CITY DOCK—The Portland commission of public docks has authorized its engineers and staff to rehabilitate the old pier B of terminal No. 1, improve and enlarge the slip between the terminal and the former Eastern and Western mill site, and rebuild the mill property for lumber storage.

FOREST PRODUCTS PLAN BEND PLANT—A lumber remanufacturing and furniture plant, to be known as Cascade Forests Products, has been started in Bend.

JEFFERSON PLANT SALE APPROVED—Sale of the Jefferson, Ore., surplus flax fiber plant to the Santiam Flax Growers' has been approved by the WAA. The plant, which cost the government \$151,308, but has suffered fire damage since, was sold to the co-operative for \$10,120 cash. Santiam operated the plant for the government during the war.

NEW BENMAR PLANT OPENS — A new Portland manufacturing plant, Benmar Manufacturing Company, has opened new quarters on 1900 S. E. Grand Avenue. Formerly located at 3432 S. E. Belmont St., the company produces men's, boys' and women's outdoor garments.

POWER LINE PLANNED BY BONNEVILLE — The Bonneville power administration is planning a transmission line from Grand Coulee down through Klamath Falls and hook it up with Shasta dam. Bonneville has earmarked \$6,000,000 to construct the line from Madras, and \$2,200,000 to build a substation at Klamath Falls.

FIRM BUYS CHILOQUIN BOX FACTORY—The Chiloquin Lumber Co. box factory has been purchased by the American Box Corp., San Francisco. John Bechen, formerly of Sprague River, becomes the new manager.

JONES LUMBER PROPERTY SOLD—The Jones Lumber Company mill and approximately 25 acres of property at 5500 S. W. Macadam Avenue, Portland, has been purchased by the B. P. John Furniture Company for approximately \$150,000. The sawmill will continue operating under lease to a new company, the Jones Lumber Corporation, which took over management early in September. The Jones mill is being managed under the new setup by Edward W. Weiss.

PLANT PROJECTED — Joe W. Anderson, veteran Astoria packer, is associated with three others in establishment of the Anderson Packing Co., which will construct and operate a fish-receiving and processing plant on the Astoria waterfront. The firm has been incorporated for \$100,000. Other members are Frances Jeanne Anderson, the packer's daughter; R. Ropplel, formerly of Oregon City and active in local fisheries, and Gordon Sloan, local attorney.

WAREHOUSE CONSTRUCTION APPROVED—Union Pacific Railroad has received CPA approval for construction of a \$150,000 warehouse in Portland. It will be used by Westinghouse Electric Supply Co. Present plans call for a one-story concrete structure about 200 feet square.

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SALT FIRM PLANS EXPANSION—An additional 30 employees will be added to the staff of the Portland plant of the Pennsylvania Salt Manufacturing Company at 6400 N. W. Front Avenue, when new facilities for expanding the operations are completed some time after the middle of next year.

ALUMINUM PLANT TRANSFER—Salem's huge aluminum plant is now operated by the Columbia Metals Company of Seattle instead of by the Willamette Fertilizer Company of Woodburn. The plant has been leased by Columbia Metals from the government and will operate as a private industry.

GLASS DECORATION IS NEW OREGON INDUSTRY—One of Portland's newest industries is the glass decorating plant of Ireland Industries, Inc., located at 4175 N. W. Yeon Ave. It is the offspring of a Vancouver, B. C., concern that was started by R. H. W. Ireland and his brother something over a year ago and now has a payroll of over 100. The company employs a new and secret sand-blasting process.

WILL REBUILD SALEM PLANT — Rich L. Reimann, temporarily making his headquarters at the Reimann Sheet Metal Co., 1945 Fairgrounds Rd., Salem, will rebuild his furniture manufacturing plant as soon as materials and machinery are available. The plant, Reimann Furniture Manufacturing Co., was destroyed by fire recently. A plant as large if not larger than the former 100x200-foot furniture establishment will be constructed on a new site.

PREFABRICATED GREENHOUSES MANUFACTURED — Apex Wood Products Co. of Salem, has been formed to manufacture prefabricated garden greenhouses and other wood products. Jack Rhine will direct sales activities with headquarters in Portland. E. Gerlinger will be in charge of production. The firm will market a new type of greenhouse made of shatterproof glass.

POWER LINE TO BE CONSTRUCTED—California Oregon Power Co. has scheduled construction about March 1 of an alternate power transmission line from Klamath Falls to Lakeview via Alturas. Line is expected to cost about \$250,000 with additional equipment costing \$50,000.

MILL TO EXPAND—A \$100,000 expansion program, to include a resaw mill with a dry kiln nearby, will be started soon in Salem by the Keith Brown Company. W. M. Hamilton, who recently retired as division manager for the Portland General Electric Company, will be plant co-ordinator for the company; M. E. Walters, general manager.

AMONG PORTLAND EXPANSIONS—Amco, Inc., S. W. 6th and Madison, plans one-story and basement repair building at an estimated cost of \$53,000.

#### UTAH

NEW GENERATING PLANT IN 1950—Utah Power & Light will spend approximately \$6,000,000 on a new steam-electric generating plant at Orem, Utah, early in 1950.

# Special Offering - Immediate Delivery ALUMINUM STRIP - In Coils

30,000# .051 x 24" Coils 3-SO 65,000# .032 x 107/8 Coils 3-S-1/2 H 40,000# .025 x 9" Coils 2-SO

ALSO OTHER SIZES OF ALUMINUM in Coils and Sheets

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Los Angeles 11, California 4800 Corona Avenue

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QUESTION: George, how do you like the Philadelphia Hoist? ANSWER: It sure is easy on the pull, lifting heavy loads.

Points to Be Considered When Purchasing Spur Geared Chain Hoists

**SAFETY** (PHILADELPHIA chain hoists contain no cast iron. Only the toughest materials are used.)

EFFICIENCY (The application of TIMKEN Tapered Roller Bearings at the greatest friction areas allows the load to be raised and moved with the least amount of human effort.)

PRICE (The added safety and increased efficiency built into PHILADELPHIA chain hoists can be had at no additional price.)

PHILADELPHIA-TIMKEN bearing spur-geared chain hoists made in capacities  $\frac{1}{4}$  to 20-tons.

PHILADELPHIA screw geared chain hoists made in capacities 1/2 to 2-ton.

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PHILADELPHIA I beam trolleys (plain and geared) made in capacities 1/4 to 20-ton.

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#### THE WEST ON ITS WAY

UTAH COPPER IS NO MORE—Henceforth the huge operations at Bingham which have been internationally famous as North America's largest open cut copper mine will be known as Kennecott Copper Corp., Utah Copper Division. There will be no change in operating personnel.

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CHEMICAL COMPANY PLANS EXPANSION—The Utah Chemical & Carbon Co. plans erection of an \$800,000 plant unit in Salt Lake City for production of chemicals, drugs and other substances derived from coal tar as well as a smokeless fuel known as "char." The Utah Chemical & Carbon Co. in Salt Lake City was incorporated last July by Grant Macfarlane, Arthur McFarlane, Raymond R. McFarlane, Weston E. Hamilton and Richard F. Harding. Heading the concern is Walter M. Russell, New York City, president, with H. W. Monahan, New York City, vice-president and director.

COAL PLANT TO BE BUILT—A new corporation in Carbon County has started a coal processing plant with a capacity of 100 tons per day on a site near Wellington in the Carbon coal fields. This plant will also process coal into a smokeless "char," to be used domestically or industrially. President of the new corporation at Carbon county is L. A. Grundvig, Wellington. Dr. F. R. King, Price physician and past president of the Southern Utah Associated Civic Clubs, initiated the plans.

PAPER FACTORY PLANNED—Oregon Pulp & Paper Company has bought a 40-acre site near fast-growing Provo, Utah (near Geneva steel plant) on which it contemplates building a \$100,000 factory.

#### WASHINGTON

DEER PARK FIRM INTEREST SOLD—The Chicago and Riverdale Lumber Company of Chicago has purchased a substantial stock interest in Deer Park Pine Industry, Inc., from the Walter M. Leuthold family of Deer Park and Spokane. John H. Leuthold is president. Howard Dekker, son of Garret H. Dekker, is president of the Chicago and Riverdale Lumber Company and H. F. Hasbrook, vice-president in charge of sales. Deer Park Pine Industry, Inc., was organized last July to take over the logging and lumber interests of the Deer Park Lumber Co., with operations in this country and British Columbia.

PLANT BUILDING FISHING CRAFT—Maritime Shipyards, 27th Avenue West and Commodore Way, Seattle, is busy on a large amount of equipment which will be used during the 1947 Alaska fishing and cannery season. This plant is completing an 80-foot power barge and three 72-foot lighters for the Alaska Packers' Association, which will be used in the Bristol Bay District. Work soon will be begun on another power barge for this company, and a 72-foot power scow and a 40-foot power scow for Libby, McNeil & Libby.

LONGVIEW PLYWOOD PLANT JOB BEGINS—Driving of piling at the Weyerhaeuser Timber Co. millsite in Longview has marked the beginning of construction of a new million dollar plywood plant, which is expected to be completed and in operation early next fall. The plant will provide employment for about 300 persons. The annual output is expected to be approximately 80,000,000 board feet of plywood of all grades.

YARD REMAINS IN "MOTHBALLS" — Vancouver shipyard will remain in a reserve standby status. The half-mile long outfitting dock of the shipyard will be used for stripping of ships for lay-up with the reserve fleet in Cathlamet bay, near Tongue Point, Astoria.

SPOKANE FIRM BUYS MOLDERS—Spokane's bid for industry took another forward step when the RFC sold two molding machines to the Western Light Metals, Inc., 108 Union Road, Spokane. The machines will be used for fabricating lamp posts from cast aluminum which will be used on top of Grand Coulee dam. Eight hundred posts were ordered for the dam. C. L. Wheeler is vice-president and general manager of the company.

NEW BOX PLANT—Walla Walla will be the location of a large box factory next spring. Purchase of a full city block of approximately three acres of land on Thirteenth St. has been made by C. H. Hooper, who will construct a modern box factory as soon as weather conditions permit

ALCOHOL PLANT SOLD—WAA has sold a Bellingham, Wash., alcohol plant to the Puget Sound Pulp and Timber Company for \$450,000. The company operated the plant during the war for production of alcohol as a wood pulp by-product. It cost the government \$1,134,800. Further improvements estimated to cost \$65,000 to \$100,000 are contemplated.

4 GRAIN ELEVATORS RAZED IN TACOMA BLAZE — More than 500,000 bushels of smouldering wheat burst through the burning walls of the Centennial Flouring mills at Tacoma and cascaded out like molten lava at the height of a spectacular \$2,000,000 blaze that destroyed four grain elevators January 30.

NEW FIRM BUYS PLANT—Plant No. 3 of the Todd Shipyards Corporation has been purchased by the West Waterway Dock Corporation of Seattle, and plans have been made for an ocean shipping terminal. A. R. Van Sant, vice-president of the Lake Washington Shipyards, is president, and Howe S. Foster of the MacLean Construction Company and the West Coast Painters Company, is vice-president of the new corporation.

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NEW GAS PLANT WORK BEGINS—After more than two years of planning and construction, the Seattle Gas Company has begun operation of its new \$1,500,000 dual gas-production units which will almost double the capacity of the Lake Union plant. The installation will be the only one of its kind in the nation. N. Henry Gellert is president of the company.

BENTON CITY PLANT PLANNED—Plans have been made for construction of a \$180,000 processing and distilling plant in Benton City. Three incorporators filed articles of incorporation at Olympia, listing a capital stock of \$250,000. The plant will be designed for a processing capacity of 2,000 tons of peaches and apricots annually and will require 12 buildings in all, each of fireproof concrete construction, with wood frame roofs.

NEW PAPER CONVERTING PLANT FOR VANCOUVER—Milprint, Inc., Milwaukee, Wis., is establishing a paper converting and wax bag fabrication plant at Vancouver. Approximately 40 persons will be employed on two shifts. A. H. Stone is assistant production mgr.

PLANT OPENED—The Bower Lumber Co. has opened a resaw and planing mill on Lake River at the former site of Bratlie mill in the Ridgefield section. Plans are progressing, and some work done, toward building a sawmill on Lake River where many thousands of feet of timber have already been floated for milling.

PLANT UNIT APPROVED AT PORT ANGELES — The Clallam Grain Co. plans construction of a quick freeze unit at a cost of \$75,000, on ground east of the plant on the port of Port Angeles terminal, Ray Porsch and Lemuel Ross are owners. The proposed plant will be designed for quick freezing of green peas, ear corn, broccoli, spinach and blackberries or other berries that may be grown here.

NEW RESEARCH BUILDING SOUGHT—A \$175,000 food-processing research building for the Western Washington Experiment Station at Puyallup to supplement another in operation at Prosser will be requested of the 1947 Legislature.

ALTERATION OF BUILDING—The Washington Iron Works' pattern shop at 1101 Airport Way, Seattle, has been purchased by George Horluck who plans to remodel the structure at a cost of about \$50,000 and occupy it as an ice cream manufacturing plant. The iron worksproposes the construction of a new pattern shop as a unit of its plant at 1500 Sixth Avenue South.

GUILDS LAKE BUILDING WORK ASSURED—Montgomery Ward & Co. is completing the purchase of a site in the Guilds Lake area, Seattle, where it intends to construct a \$2,500,000 warehouse — the largest in the Pacific Northwest. The warehouse, expected to cover the 14.24-acre site when completed, will provide approximately 650,000 square feet of storage space, all on one floor and available to truck and rail transportation.

MEAT PLANT PROJECTED — E. G. Putnam Co., Polson Bldg., Wenatchee, plan construction of a \$100,000 Wenatchee Meat Co. plant. Building plans call for a 55x63-foot, two-story abattoir structure of reinforced concrete, a34x36-foot, one-story brick offal room, a 20x30-foot two-story brick and concrete boiler house and dressing room, coolers with 2,500 feet of floor area and additional stock pens.

STEEL PLANT SOLD—The Columbia Steel Casting Co. plant No. 2 at 734 N. E. 55th Ave., Seattle, which was leased from the Defense Plant Corp. for wartime manufacturing, has been sold to the firm's president, Harvey F. Dick, for \$100,000. The property involves an 80x737-foot plant and adjoins property owned by the Columbia Steel Casting Co., which is under lease to C. D. Johnson Lumber Co.

SPOKANE FIRM WILL BUILD PREFAB HOMES—A newly organized firm, Ideal Homes, Inc., has started production of prefabricated homes at Spokane. The two- and three-bedroom homes will be sold in "complete packages" to veterans in Washington, Idaho, Oregon and Montana. They can be assembled by a contractor in ten days. President is A. B. Cerenezie and Hal Carlin is vice-president of the company.

#### WYOMING

MORE GYPSUM SOON—Gypsum is being made ready for Western farmers, with mining activities under way near Cody, Wyo., in the western section of the state. It is expected that the plant will be in full operation by spring. The plant was formerly the property of Wyoming-Midland Gypsum Company.





CONOMY STEEL COMPANY

Write for our new steel dimensional chart.

9901 SOUTH ALAMEDA ST., LOS ANGELES

#### WESTERN

# TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND SELL INDUSTRIAL EQUIPMENT AND MATERIALS

The Alvey Conveyor Mfg. Co., St. Louis, Mo., has appointed Mailler Searles, Inc., San Francisco, as general representatives in the seven Pacific Coast states and the territories

W. H. Jaenicke Pres., Mailler Searles

of Alaska and Hawaii. In turn, Mailler Searles, Inc., has appointed as field representatives in the Northwest section, the firm of Food Industries Engineering and Equipment Co., Portland and Seattle, whose executives include: Chris Gabriel, president; F. J. Wear and Stanley St. George, vice - presidents; and Ernest Gabriel, treas.

At the second annual sales conference of L. D. McLean & Co., 442 Colyton St., Los Angeles, Tony Whan, president of Pacific Indoor Advertising Co., and A. T. Danielson, vice-president of Barker Bros., and president of National Federation of Sales Executives, were speakers. The three-day conference was devoted to the technical side of the sanitary chemical industry and to improved selling and serving of industries.

Harold E. Hugo has been appointed sales development manager for the Westinghouse Electric Appliance Division, Pacific Coast dist.

Paul R. Pollock has been named manager of the Denver, Colo., office of the Allis-Chalmers Mfg. Co., succeeding Henry H. Roth, who has been transferred to motor generator sales section of main plant in West Allis, Wis. . . .

Harold P. Curtis, formerly Pacific Coast sales manager for Rustless Iron & Steel Corp., has been appointed Pacific Coast sales manager of the Babcock & Wilcox Tube Co. with headquarters in Los Angeles. . . .

Ray R. Croke has been appointed assistant manager of Fuel Sales Dept., Colorado Fuel & Iron Corp., in Denver. J. S. Besser is manager. Eitel-McCullough, Inc., 141 San Mateo Ave., San Bruno, Calif., manufacturer of power-type vacuum tubes, has appointed The Dave M. Lee Co., Seattle, Wash., as regional sales representative. James F. Johnson, vice-chairman of the Seattle IRE section, is the sales engineer in direct charge of the line. . . .

Henry F. Schlink of the Hessler Mfg. Co., has been advanced from sales promotion manager to general sales manager. James I. Hessler is president....

Walter Pavela

Fruehauf Trailer Company of California has promoted Walter Pavela from sales manager to branch manager of the factory branch in Salt Lake City.

Industrial design service to manufacturers, engineers and architects has been established in Portland with the organization of R. K. Grubb & Associates, Room 202, 519 N. W. Park Ave. J. L. Buerle heads the firm. . . .

Oregon Industrial Factors have moved to a larger location at 2410 North Randolph Ave., Portland, and are advising of the full time availability of Elliott B. Higgins as mechanical engineer to help solve engineering problems.

Harvey Machine Co., Inc., has joined the Copper & Brass Research Association. The company has acquired a large Government wartime plant in Los Angeles and will manufacture rods, bars and structural shapes made from the red metal and its alloys....

The Hugh B. Williams Mfg. Co. of Dallas, Texas, has appointed the Joslyn Companies distributors of the hole digger which is a heavy duty machine, manufactured in three sizes. . . .

Herbert S. McWhorter has been promoted to sales manager of the Pacific Coast division

of U. S. Rubber Co., and Louis J. Healey to district manager of the San Francisco branch, footwear division. Charles William Pennington, former sales manager of the coast division, has been appointed sales manager of Clothing and Coated Fabrics, succeeding William F. Cairns, retiring. . . .

The name of the American Foundry Equipment Co., of Mishawaka, Ind., has been changed to American Wheelabrator & Equipment Corp. Otto A. Pfaff is president. . . .

A newcomer to the West is J. R. Morath who has established the first local direct representation for Naugatuck Chemical Division of U. S. Rubber Co., at 190th and Vermont streets, Gardena, Calif. The company produces a variety of chemicals for agriculture and rubber industries and synthetic resins and plastics.

California representation for Heresite & Chemical Co. has been awarded to Soc-Co Plastic Coating Co., 3534 E. 22nd St., Los Angeles, P. A. Smits is head of Soc-Co, which is active in the coating field in application of baked and air-dried phenolic coatings. . . .

Ford C. McElligott, formerly advertising manager, has become sales and advertising manager, Airquipment Co., Burbank, Calif. . . . Hig

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The Lincoln Electric Co., Cleveland, Ohio, has new locations for its branch offices. The San Francisco office and warehouse is at 1302 Stanford Ave., Emeryville 8, Calif., under the direction of L. P. Henderson, district manager and welding engineer, and the Los Angeles office and warehouse is now located at 1500 Calzona St., P. O. Box 7336, Station L, Los Angeles 23, Calif., where J. B. McCormick is district manager and welding engineer. . . .

The distributing concern, E. E. Richter & Son, is building a new plant at Hollis and Powell Streets in Emeryville. Company distributes air-cooled industrial and agricultural engines manufactured by Wisconsin Motor, Lipe Roll-way Clutch Co., and Yates-American Radiator Co. Firm will occupy new building in 60 days. . . .

Dr. David B. Charlton of Charlton Laboratories, Portland, has become associated with Harry Czyzewski, consulting metallurgical engineer, in the formation of Metallurgical Engineers, Inc., a new service for the Pacific Northwest metals industry, located in the Charlton Laboratories Bldg., 2340 S. W. Jefferson St., Portland. . . .

Byron W. Butler, formerly manager of the Salt Lake City branch, has been appointed manager of the Seattle branch of W. P. Fuller & Co., 301 Mission St., San Francisco, succeeding George W. Feldman, retiring. C. E. Freeman of San Diego becomes manager of the Salt Lake City division.

Pacific Coast Industrial Equipment Co., 317 North Berendo St., Los Angeles 4, Calif., of which R. A. Brow is sales engineer, has added the Morrison Engineering Corp., Cleveland, Ohio, to its line. Morrison manufactures industrial ovens, laboratory ovens, heat treating units, wire bakers, furnaces for heating, drawing and annealing of brass, copper, aluminum or glass.

or glass.
Company also represents International Conveyor & Washer Corp., David-Ludwig Co., Gray Hub Co., Acme Wire & Iron Works, Northern Engineering Works, and the Broden Construction Division of Wean Engineering Co. of Cleveland, Ohio.
Company engineers, furnishes and installs all

Company engineers, furnishes and installs all types of conveyors and hi-lift electric hoists and cranes as well as industrial ovens, furnaces, etc.

Ben Lee Mattingly, formerly sales engineer at the St. Mary's Ohio, plant, has been named manager of molded goods sales, Goodyear Tire & Rubber Co. in Los Angeles.



• Personnel of I. F. Schnier Co., Pacific Coast distributors for Armstrong Cork and "Cel-O-Seal," at San Francisco sales meeting are, left to right: B. E. Thomason, H. Earle, W. Meyers, T. Hill; W. B. Moonie, credit mgr.; R. F. Schnier, C. Coulter; H. Heintz, Standard Oil Co.; C. A. Lyon, gen. mgr.; I. F. Schnier, pres. Inset (I. to r.) J. B. McCandless; R. Forsmann, office mgr.; J. Lombard, A. W. O'Neill, A. Turnquist and J. Fernandez, export mgr.

# **NEW METHODS** MATERIALS **EQUIPMENT**

That Will Help To Cut Your **Production Costs** 

#### High-Speed Mixer A Time Saver

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The amazing speed of a new-type mixer will cut the time of mixing operations in a variety of industries ranging from asphalts to foods. It turns out a capacity of three cubic feet of material at a rate as high as two batches a minute, depending upon materials being mixed.

This portable mixer employs a new principle in mixing action, and is designed to handle asphalts, sand, feeds, foods, ceramics, chemicals, floor emulsions, insulating materials, roofing materials, paints, concrete. It is equipped with a pump for introducing liquids.

Called the Foote Kinetic Mixer, it is made by the Foote Company, Inc., Nunda, New York.

#### **New Caster Light But Strong**

A bow to the increasing popularity of lightweight metals in handling materials



is a new aluminum alloy rubber-tired caster that cuts down weight without sacrificing strength requirements. The streamlined caster is a product of the Aerol Company, Los Angeles, Calif.



Lightweight accordion conveyor built to be portable, yet handle heavy and bulky loads.

#### A Conveyor To Fit Any Job

A new accordion conveyor attacks materials handling with a versatility that fits it for multiple uses.

Accordion hinges and telescopic legs give flexibility, and its light weight makes it easily portable. Each roller is built to carry a load up to 80 pounds. The manufacturer is Food Machinery Corporation, Los Angeles, Calif.

Push Button Assembly Simplifies Die Spotting

For faster and easier handling of dies Mercury Manufacturing Co., Chicago, has come up with a die handler assembly which controls individual die movers with dashboard push buttons.

The assembly is built into the lift truck, and the die movers may be retracted so that skids can be handled on the same

#### A Brand New **Precision Tool**

New in the precision tool field is a portable instrument for determining the degree of hardness of materials, called the Ames Hardness Tester. It is operated by screw action rather than weights and levers, and is designed for fast, accurate readings. It weighs less than two pounds. Ames Precision Machine Works, Wal-

tham, Mass., is the manufacturer.

Yessir! I'm Interested in Anything New That Will Help Me Do a BETTER JOB.

WESTERN INDUSTRY 503 Market Street San Francisco

Please send me information on the following iteans:

Company

Address



 Pallets are unnecessary when using this new lift truck attachment for materials handling.

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#### Handling Loads Without Pallets

Plant operators will be interested in a new device for lift trucks which eliminates the use of pallets by substituting an inexpensive, lightweight load base that requires little maintenance and storage space. The carrier sheets are lifted onto the truck by a gripper device which clamps an overhanging margin and pulls sheet and load onto a plate. At destination a pusher deposits the load in place.

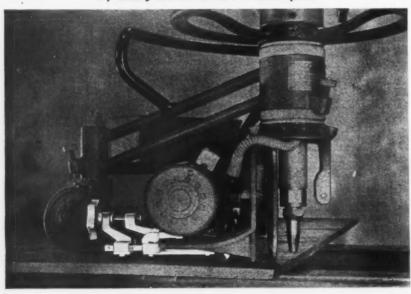
Clark Tructractor, Battle Creek, Mich., the manufacturers, call the new device "Pul-Pac."

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#### Cutting Attachment Eliminates Waste

Oxy-acetylene circle-cutting has been a wasteful operation because it has not been possible to cut small circles to the extreme edge of a plate. A new attachment made by the Linde Air Products Co., New York City, even cuts into the corners of any plate, making it possible to save metal that would have been wasted otherwise.

 Oxy-acetylene circle cutter eliminates waste by cutting into the corners of metal plate.



# What Can You Make For Ford?

(Continued from page 59)

well as the San Francisco Bay Area Council, spearheaded the program.

The over-900 individual items exhibited were diversified. Blue print, cut-away exhibits and other materials aided local manufacturers in knowing what Ford wanted.

Mr. Breech told the manufacturers that the company could not at present purchase in California such items as motors, transmissions, body sheet metal parts, which require millions of dollars of special tooling and dies. Such tools and dies must be amortized over a great number of units. However, there are thousands of units the company regularly needs which do not require such extensive tooling exepnditures. Those are the items the company expects to buy to the greatest possible extent where the cars are sold.

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In raw materials, Ford wanted coal, iron ore, pig iron, steel, scrap, and non-ferrous metals. In finished products it wanted Lincoln engine parts, chassis parts, bodies and trim, batteries and accessories; high-cycle tools, oven furnaces, paint spray booths and equipment, conveyors, dies, jigs and fixtures, and machine tools; machine parts and stamping equipment, shop parts, tires, textiles and paints, springs, frames, rough castings and forgings, electrical and rubber accessories, and bodies.

#### How to Find Out More About What Ford Wants

The company has shipped out to its Richmond, California, plant 13,000 sets of blue prints of the items it wans. It will furnish interested manufacturers with samples as well as blue prints. A representative of the central buying office in Dearborn will be at the Richmond plant to work with interested manufacturers and act as liaison between Western concerns and the respective buyers in Dearborn to help furnish all of the information necessary to determine price quotations.

Browning issued an invitation to Western manufacturers to visit any of the company's plants in the East to see how it produces these items, and said his company stood ready at any time to be of assistance.

Precision Grinding Made Easy

For the tool room requiring grinding to very close tolerances, the DoAll Company, Des Plaines, Ill., has put on the market a new hand-operated surface grinder designed for easy action at a comfortable table height. Hardened gears running in needle bearings and driven by a 16-inch wheel, handily located, make this possible.

The machine is also built for greater accuracy and longer wear.

## HELPFUL LITERATURE

# For the plant operator who wants to keep informed

"Streamliner" Portable Conveyors—The illustrated Harry J. Ferguson plant booklet describes their "streamliner" wheel conveyors and the gravity roller conveyors, tripod stands, portable belt conveyors and dollies which are manufactured at the Jenkintown, Pa., plant. Available from Robert M. Taylor Co., San Francisco, Calif.

Ryerson Flame Cutting—Joseph T. Ryerson & Son, Inc., steel distributors, have issued a new, illustrated bulletin on flame cutting which describes their facilities for producing plain and intricate shapes from steel plates. A number of typical flame-cut sections are shown along with information regarding the use of irregular shaped steel plates in both production and maintenance work. Joseph T. Ryerson & Son, Inc., Los Angeles 54, Calif.

Rapid-Wheel Conveyors — Available is a broadside of the Rapid-Wheel gravity conveyor spur curve and the Rapid-Wheel gravity conveyor hinged section, which describes the two special devices and their uses in a Rapid-Wheel conveyor installation. List prices and specifications of each are included. The Rapids-Standard Co., Inc., Grand Rapids 2, Michigan.

Lotest Chain Hoist Information—Chester Hoist Co. has just issued a new 16-page bulletin, covering its complete line of spur geared and differential chain hoists, together with Army-type low-headroom Timken-equipped trolley hoists. Chester Hoist Co., Lisbon Ohio.

Portable Lighting Available—A new booklet describes the four new DA-V-LITE portable lighting and power units, including complete specifications of floodlight, searchlight, combination and beacon models. In addition to lighting uses, DA-V-LITES can be employed to supplement existing power facilities or to provide motive power for electric tools. Davey Compression Co., Kent, Ohio.

Engine Exchange Plan — A new folder explains Continental's remanufactured engine replacement plan for planes, whereby the engine is taken out by experienced mechanics and replaced with a newly-remanufactured engine. Only time required for replacement is necessary. Continental Motors Corp., Muskegon, Mich.

2132 Combination Work Table and Conveyor—PF-8, an illustrated 8-page bulletin, features an all-purpose conveyor, mechanized work table for assembly, inspection and packing operations. Island Equipment Corp., New York 17, N. Y. 2133

Carbide Dies for Drawing Sheet Metal—Booklet No. D-120 contains numerous time and money saving ideas for anyone connected with the deep drawing of sheet metal. Numerous jobs, selected to give a good idea of the versatility of carbide dies, are illustrated and described. Carboloy Co., Inc., Detroit 26, Mich.

Power Industrial Trucks and Cranes—Illustrated, with principal specifications, are 31 power truck and crane models, including low-lift, with and without crane units; high-lift platform trucks; fork-type cranes; stationary-

bed load carriers and tractors. Issued by Elwell-Parker Electric Co., Cleveland, Ohio.

Arcos Oxygre Process—Arcos Corp. has developed a new process for hand cutting stainless and stainless clad, alloy steel, aluminum, bronzes and brasses, cast iron, monel, inconel and nickel, achieved by the combination of an electric arc and a stream of oxygen. Write for descriptive folder. Arcos Corp., Philadelphia 2, Pennsylvania.

The "Marquette Story"—This new 16 mm. full color movie presents action shots of interesting details in the construction of Marquette "instant arc" welders. It will be loaned upon request. Dept. JB, Marquette Mfg. Co., Inc., Minneapolis 14, Minn.

Engined-Refrigeration — Just published is a booklet on Ready-Power engined refrigeration which describes company's compact, factory-built engine-compressor units and engine-condensing units, with unit construction, direct drive, unloaded starting and automatic control, for refrigeration anywhere. The Ready-Power Co., Detroit 14, Mich.

New Needle Valve—Kerotest Mfg. Co. has published a bulletin containing complete details on the new precision needle valve, for gage and metering lines, instrument lines, test lines, and other high temperature, high pressure, or corrosive services in many industries. Kerotest Mfg. Co., Pittsburgh 22, Pa.

Pennsalt Manual F-1—Because general commercial shipments of fluorine are such a recent development, Pennsalt passes on to potential users all present information, in a booklet which supplies information on properties and precautions for handling fluorine, to bring their data up to date before beginning research with the gas. The manual gives instructions for handling half-pound cylinders of the highly reactive element, including known data on first aid; the chemical and physical properties of the element, an outline of literature on organic fluorine compounds and an introduction to the chemical literature of inorganic fluorine compounds. Pennsylvania Salt Mfg. Co., Philadelphia 7, Pa.

Multiplex Radial Arm Saws—This colorful circular features a new and larger size saw and an advanced design of drill press. Photographs, drawings, and written material describe the performance of Multiplex saws and drill presses. Detailed information is given for each of the various types and specifications are included. Red Star Products, Inc., Cleveland 3, Ohio.

Heating Chemical Process Vessels—A description of the Electro/Vapor heating system, made by Blaw-Knox Co., is contained in a four-page colored bulletin just made available. This method of heating application for chemical process vessels combines the advantages of electricity and Dowtherm heating. Ask for Bulletin No. 2083. Blaw-Knox Co., Pittsburgh, Pa.

Railroad Shipping Losses Reduced—Further success in the reduction of freight-car shipping losses, by means of glued-unit loading to pre-

vent damage in transit, is announced in a detailed and illustrated report released by the Association of American Railroads. The report gives specific instructions for applying the glue and shows which methods have so far proved most successful. These methods permit clean, safe shipping of canned goods, light bulbs, china, bottled goods and all other fragile materials in cartons, boxes or paper and fabric bags. National Adbesives, New York 16, N. Y.

Fabricating and Processing Aluminum—To meet the growing demand for more technical information on fabricating and processing aluminum in all its forms, Reynolds Metals Company has inaugurated the "Technical Advisor," a four-page monthly technical paper devoted to publicizing latest recommendations on how to use aluminum mill products most effectively. The publication will present technical process studies serially, a regular question and answer page, and discussions of specific applications of technical information. Reynolds Metals Co., Louisville 1, Ky.

Ball Bearing Bulletin—A handsome 20-page bulletin describing their new line of SC ball bearings has been issued by the Dodge Manufacturing Corp. It gives pertinent engineering information covering pillow blocks, hanger bearings, flanged units, take-up units, cylindrical units, and steel frame ball bearing take-ups. Selection tables provide a convenient means of selecting the right bearing for application. Bulletin A-120. Dodge Manufacturing Corp., Mishawaka, Indiana.

More Effective Insecticides — Two years' progress in the development of the intimate blending of dust insecticides and similar fine powder formulas and their application, is reviewed in a new bulletin released by Sprout, Waldron & Co., manufacturing engineers of flour and feed and processing equipment. This eight-page, colored bulletin shows pictures of new equipment, and diagrams showing how the blending process operates. Bulletin I-846, Sprout, Waldron & Co., Muncy, Pa.

Test Instruments — A complete catalog of radio, electrical and electronic test instruments made by Radio City Products Company, has just been issued and includes, in addition, a complete listing of the Reiner line of precision equipment, now being marketed by RCP. Ask for catalog No. 129, available from jobber or direct. Radio City Products Company, Inc., New York City.

Preventing Industrial Accidents—After two and a half years of research and preparation, the National Safety Council has published its new "Accident Prevention Manual for Industrial Operations," a 544-page manual containing 400 illustrations, charts and tabulations, intended as a handy source of accident prevention information for safety directors, safety engineers and foremen. Among the major subjects covered are plant design and layout, construction and demolition, equipment, guarding and operating machinery, materials handling, electrical, chemical, fire and explosion hazards. National Safety Council, Chicago 6, Ill.

Scientific Apparatus—An attractive new bulletin from the Burrell Technical Supply Co. describes their new instrument for separating, identifying, measuring and collecting the components of light hydrocarbon gas mixtures and recording the analytical data. Bulletin No. 205. Burrell Technical Supply Co., Pittsburgh 19, Pa.

New Lift Trucks—A description of a new lift truck, showing diagrams and dimensional specifications appears in a new six-page catalog just released by Lift Trucks, Inc., Cincinnati, Ohio.

March, 1947—WESTERN INDUSTRY

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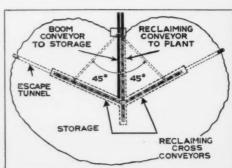
View toward storage pile showing S-A Belt Conveyor on boom (above) and tunnel exit of reclaiming S-A Belt Conveyor System (below)...part of 30,000 ton capacity storage pile is visible.

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Plan view of storage system showing set-up for the reclaim ing conveyors which operate in tunnels under the storage pile

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